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CONTENTS

General 537–564
Sensation and Perception 565–582
Feeling and Emotion 583–586
Attention, Memory and Thought 587–593
Nervous System 594–603
Motor Phenomena and Action 604–627
Plant and Animal Behavior 628–642
Evolution and Heredity 643–657
Special Mental Conditions 658–684
Nervous and Mental Disorders 685–695
Social Functions of the Individual 696–729
Industrial and Personnel Problems 730–745
Childhood and Adolescence 746–755
Educational Psychology 756–799
Biometry and Statistics 800–805
Mental Tests 806–819

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AUTHOR INDEX

Adler, A., 537
Alderman, G. H., 756
Allee, W. C., 628
Allen, E., 604, 605
Allency, R., 658
Allport, F. H., 696
Alsberg, C. L., 641
Angulo y Gonzalez, A. W., 594
[Anon.], 685, 730, 731
Asher, E. J., 746
Augustin, V. E., 697
Aveling, F. A. P., 548

Banker, H. J., 757
Bartels, M., 565, 606
Bartlett, E. D., 732
Bazett, H. C., 607, 620
Berkeley-Hill, O., 686
Bertrand-Barraud, —, 538
Bhattacharyya, G., 758
Bingham, H. C., 629
Blackwood, B., 806
Boas, G., 539
Bolin, J. S., 643
Bonjour, J., 659
Borries, G. V. T., 608
Bose, G., 566
Bozzano, E., 660
Breed, F. S., 759
Brewer, J. M., 733
Bridges, K. M. B., 747
Briggs, T. H., 748
Brown, C. F., 742
Bucy, P. C., 595
Bureau of Public Personnel Administration Staff, 734, 735
Byrom, M. E., 661

Callahan, J. L., 698
Carlson, A. J., 609, 617
Carus, P., 540
Catlin, G. E. G., 699
Cattell, J., 541
Cattell, J. McK., 541
Cholodny, N., 630
Chu, K. T., 542
Clay, H. A., 760
Collingwood, R. G., 548
Conklin, E. S., 631
Cope, O. M., 618
Cordero, N., 619
Cox, G. J., 761
Crossman, A. M., 644
Cummings, D. E., 736
Curtis, J. W., 783

Daniel, J. F., 662
Darsie, M. L., 762
de Haan, J. A. B., 631
Detwiler, S. R., 596
Deutsch, F., 663
de Weerdt, E. H., 807
Dillingham, L. B., 700
Dimmick, F. L., 567
Doisy, E. A., 605
Dragstedt, L. R., 610
Driesch, H., 543
Ducasse, C. J., 544
Dunlap, K., 545, 645
Durea, M. A., 701

East, E. M., 646
Ellis, F. W., 568
Elton, C., 632
Engelking, E., 569
English, H. B., 702, 808
Enke, W., 687
Estabrook, G. H., 763, 764
Evans, W., 717

Falin, L., 664
Farrow, E. P., 665
Fischel, W., 633
Fisher, V. E., 587
Fleischmann, P., 611
Florence, P. S., 703
Forbes, H. B., 570
Forbes, H. S., 570
Forel, O. L., 666
Fouracre, L., 765
Frazer, J. G., 704
Frenay, A. D., 705
Freud, S., 667, 668, 669
Fricke, C. W., 706
Fritz, M. F., 809

Galloway, T. W., 749
Ganguli, M. L., 612
Garth, T. R., 707
Gates, A. I., 766, 810
Geley, —, 682
Gerard, R. W., 597
Gesell, A., 750, 751
Gilbert, M., 793
Ginzburg, B., 708
Glässel, D., 737
Goitein, P. L., 670
Goldenweiser, A., 722
Goodenough, F. L., 811
Goodrie, M., 656
Gregory, W. K., 647
Gurdjian, E. S., 598

Hadfield, J. A., 548
Haldane, J. S., 613
Haldi, J. A., 597
Hammett, F. S., 614
Hance, R. T., 648
Hanson, F. B., 649, 650
Hartung, H., 569
Hauscheer, H., 546
Haywood, C., 615
Hedenberg, S., 688
Heilman, M., 647
Herskovits, M. J., 709
Hesnard, A., 671, 672
Heuler, K. M., 738
Heys, F., 650
Hilgers, W. E., 739
Hitchcock, F. A., 634
Hobhouse, L. T., 548
Hockett, J. A., 710
Hoelzel, F., 571
Hoffman, J., 767
Holmes, S. J., 643
Hughes, A. G., 673
Huxley, J. S., 548

Isaacs, S., 768

Jacobson, A. C., 674
Jenkins, R. L., 651
Jennings, H. L., 652
Johnson, G. L., 572
Jones, E. S., 769
Judd, C. H., 770

Kao, C. F., 547
Kepner, T., 812
Killick, V. W., 711
Kitson, H. D., 740
Kleitman, N., 616, 635
Klug, J., 712
Knips, A., 661
Koha, S. C., 713
Kolmer, W., 600
Koppanyi, T., 635
Kravkov, S. W., 573
Kreiker, A., 574
Kuenzel, M. W., 714
Kunde, M. M., 617

LaForgue, R., 675, 689
Langdon-Davies, J., 715
Lasswell, H. D., 716
Lehman, H. C., 817, 818
Leiner, M., 588
Leonard, W. E., 676
Lewis, N. D. C., 677
Lichtenberger, M., 678
Lindemann, F. A., 548
Lindsey, B. B., 717
Lippman, H. S., 752
Lodge, J. H., 679
Lombard, W. P., 618
Lord, E. E., 751
Lowie, R. H., 718
Lush, J. L., 653

Macauley, E., 753
MacTaggart, M. M., 771
Main, J. H. T., 772
Malinowski, B., 722
Manzer, C. W., 619
Marston, W., 583
Matthews, W. R., 548
McCloy, C. H., 800
McDowall, R. J. S., [Ed.], 548
McGlone, B., 620
McIndoo, N. E., 575
McLaughlin, K. L., 754
Meakins, J., 621
Meek, W. J., 622
Meredith, G. P., 589
Messer, A., 680
Miner, J. B., 773
Mitra, S., 576
Moeller, —, 690
Moore, B. V., 741
Mulinos, M. G., 636
Müller, A., 549

Noyes, A. P., 691

Odier, Ch., 681
Ohm, J., 623
Osburn, W. J., 774
Overstreet, H. A., 550

Peter, W. W., 775
Peters, A., 719
Peterson, J., 551
Petit, E., 577
Piéron, H., 578, 624
Pierre-Jean, —, 552
Plaut, F., 553
Poljak, S., 601, 602
Poray, A., 776
Pyle, W. H., 813

Radford, P., 777
Richard, A., 778
Ritchie, F. M., 792
Roberts, H. R., 584
Rockwell, J. G., 814
Rodrigue, G., 579
Roe, A. M., 742
Rogge, C., 554
Roller, R. D., Jr., 781
Rosenthal, C., 692

Sacher, A., 580
Sandon, F., 779
Santoliquido, R., 682
Schmied-Kowarzik, W., 555
Schuck, C., 743
Schultz, J., 720
Schuster, P., 693
Segond, J., 590
Seligmann, C. G., 548
Sheldon, W. H., 801
Sherman, C. L., 721
Sherman, H., 585
Skawran, P., 591
Slocombe, C. S., 815
Slonaker, J. R., 637, 638, 639
Smallwood, W. M., 556
Smith, F. O., 592
Smith, G. E., 722
Smith, H. B., 780
Spielmeyer, W., 557
Spinden, H. J., 722
Stalnaker, E. M., 781
Stanforth, A. T., 782
Starr, P., 723
Stern, H., 625
Stern, R., 694
Stone, C. P., 640
Stone, C. W., 783
Storck, J., 558
Störring, G., 559
Stoy, E. G., 816
Straus, W. L., Jr., 654
Stryker, S. B., 784
Sullivan, E. B., 593
Sundstroem, E. S., 626
Swisher, W. S., 785
Symonds, P. M., 786

Tharp, J. B., 787
Thom, D. A., 755
Thorndike, E. L., 788
Thurstone, L. L., 802, 803, 804
Tinker, M. A., 789
Tolman, E. C., 560
Töppen, H., 724
Trow, W. C., 790
Twigg, A. M., 791

Usher, C. H., 655

Valentine, C. W., 792
Valentine, W. L., 581
van de Sande-Bakhuysen, H. L., 641
Vincent, S., 627
von Bertalanfy, L., 561
von Foerster, J. F., 744

Wagner, G., 745
Wallin, J. E. W., 793
Wang, C. C., 603
Ward, H. P., 599
Warden, C. J., 642
Warner, L. H., 642
Washburn, M. F., 586
Weidenreich, F., 725
Weiss, E., 805
Wentscher, E., 562
Wenzl, A., 683
Whipple, H. D., 794
Wilkins, E. H., 795
Wilkinson, O., 582
Willoughby, R. R., 656
Wilson, J. D., 548
Wimmer, A., 695
Winch, W. H., 796, 797
Winslow, C. E. A., 798
Wirth, W., 563
Witty, P. A., 817, 818
Wohlfeil, T., 739
Wolfe, W. B., 727
Wong, C., 564
Woo, L., 599
Woodburne, A. S., 726
Woods, F. A., 657

Yankwich, L. R., 728
Young, K., 729
Young, P. C., 684

Zirbes, L., 799
Zyve, D. L., 819

PSYCHOLOGICAL ABSTRACTS

VOL. II, NO. 3 MARCH, 1928

GENERAL

537. **Adler, A. Understanding human nature.** (Trans. by W. B. Wolfe.) New York: Greenberg, 1927. Pp. xiii + 286. $3.50.—The material in this book represents a year's lectures at the People's Institute of Vienna. It is an attempt to acquaint the general public with the fundamentals of individual psychology and to present the technique of understanding human conduct in terms comprehensible to the intelligent adult. The experiments of individual psychology have been able to do what intelligence tests have failed to accomplish—namely, to forecast an individual's future with some degree of accuracy. Since the important determinants of the structure of the soul life are generated in childhood, and join with later phenomena in one continuous pattern, to discover this fundamental behavior pattern the investigator directs his attention to the character traits and psychic movements of the patient's early childhood. (The research incidentally leads into the field of pedagogy.) Psychic life is furthermore determined by one's goal, the knowledge of which is essential to any understanding of behavior. The goal is usually that of superiority. Character traits are not inherited, but are acquired for the purpose of maintaining a particular habitus in life. The new positional or contextual psychology will presently prove that organic inferiorities need not force the development of a peculiar psychic structure. The latter is entirely conditioned by social influences. A human being may be judged by measuring his distance from the solution of the three great problems of life, which are: the question of his social responsibilities; the relationship between the "I" and the "you"; and the question whether he has fostered or hindered contact between himself and his fellows. Several illustrative cases are described.—*M. P. Montgomery* (Faribault, Minn.).

538. **Bertrand-Barraud, —. De la nature affective de la conscience.** (The affective nature of consciousness.) Paris: Vrin, 1927. Pp. 155. 12 frs.—Publication of six lectures delivered at Bordeaux: (1) Subjective criteria and the problem of consciousness; (2) abstract psychology and applied psychology; (3) the primacy of the affective processes and the psychological constitution of the subject; (4) feeling and reason; (5) psychological theory of sleep and dreams; (6) the genesis of intellect in the light of the evidence from dreams. The author seeks to indicate the independence of applied psychology with respect to experimental psychology. No bibliography.—*Math. H. Pieron* (Sorbonne).

539. **Boas, G. The datum as essence.** *J. Phil.*, 1927, **24**, 487–497.—A criticism of the theories of Strong, Drake, and Santayana, that the datum of perception is an essence or universal. Their theories are summarized in four propositions: the datum is a universal; it has transcendent reference to a particular; but a universal cannot logically imply the existence of anything; therefore the existence of the transcendent reference is posited by a non-logical but reliable act of faith. After criticizing these doctrines, Boas summarizes his own thesis as follows: the datum is not a universal, for it has transcendent reference to a particular, and a universal cannot logically imply the existence of anything; nevertheless the existence of the transcendent reference is discovered by the same type of reasoning as is used in any other inference.—*A. P. Brogan* (Texas).

540. **Carus, P. The point of view; an anthology of religion and philosophy.** Chicago: Open Court, 1927. Pp. 225. $2.50.—*W. S. Hunter* (Clark).

541. **Cattell, J. McK., & Cattell, J. [Eds.]. American men of science.** (4th ed.) New York: Science Press, 1927. Pp. viii + 1132. $6.00.—The fourth edition contains about 13,500 sketches, an increase of 4,000 over the third. "Stars are prefixed to the subjects of research of 250 awarded positions among the thousand leading scientific men of the United States. The methods used in the selection are described in an appendix [including a reprint from *Science*, 1922, 56, 541–547, on the order of merit as applied to votes] which also gives some facts concerning the distribution of scientific men in 1927."—*R. R. Willoughby* (Clark).

542. **Chu, K. T. The fundamentals and criticisms of *Gestalt* psychology.** (*Chinese*) *Eastern Miscellany*, 1926, **23**, No. 14. 83–94.—After a brief survey of the present status of psychology, the author discusses the fundamentals of the *Gestalt* theory in the following order: (1) reactions to the atomistic view in psychology, (2) reasons why analytic method misleads, (3) difficulties of sensationalism, (4) physiological basis and restatement of the law of association, (5) experimental evidence. By way of criticism, it is pointed out that the *Gestalt* viewpoint is not an isolated theory, because such authors as Driesch, Haldane, Whitehead, McDougall, James and Calkins have stressed time and again the totality concepts, the dependence of parts upon whole, their significance in the physical world, the stream of consciousness, the tendencies of the attack upon atomistic view, and finally the personalistic view. It is further shown: that the *Gestalt* theory, while emphasizing perception, overlooks emotion and will; that to go to the other extreme, e.g., to abandon analytic method, is equally faulty; and that to stress the whole at the expense of its parts is also objectionable.—*S. K. Chou* (Stanford).

543. **Driesch, H. Zur neuern Vitalismuskritik.** (On the newer criticism of vitalism.) *Biol. Zentbl.*, 1927, **47**, 641–643.—Driesch, the leading German vitalist, answers his recent critics, among others Meyerhof, A. Meyer and W. Koehler. He restates his viewpoint briefly in the light of modern scientific theory.—*J. F. Brown* (Yale).

544. **Ducasse, C. J. "Mind and Its Place in Nature."** *Phil. Rev.*, 1927, **36**, 363–372.—A discussion and criticism of Durant Drake's book of the above title. The author concludes that many of the parts of Drake's book are important, but that the structure of the whole book is inadequate.—*A. P. Brogan* (Texas).

545. **Dunlap, K. The use and abuse of abstractions in psychology.** *Phil. Rev.*, 1927, **36**, 462–487.—Psychology has freed itself from the domination of abstractions, and so has made abstractions more effective aids to its work. We must distinguish between concrete things or events, classes of them, and the common characteristics in the classes. "Deification" is the process of treating abstractions as concrete things or entities. We need abstraction, but we must not have deification. Instances of deification may be found in treatments of instinct and instincts, intelligence, sensation, image, and consciousness. Introspectionists treat consciousness as a thing, and the behaviorists argue that since it is not a thing it is nothing. Consciousness is an abstraction, but conscious processes are real.—*A. P. Brogan* (Texas).

546. **Hauscheer, H. Bergson's critique of scientific psychology.** *Phil. Rev.*, 1927, **36**, 450–461.—Bergson is similar to H. Rickert in opposing the scientific faith that science can comprehend with its concepts the reality of the whole universe. The psychical is free and creative. It displays itself in two aspects, either directly or by refraction through space. Its nature can be dealt with by an act psychology, but not by mechanism. The psychical has continuity and interpenetration. No psychological datum ever appears twice the same. The psychical cannot be considered as a quantity, and thus cannot be measured. It is subjective and can never be an object. Its inner nature can be grasped by intuition, but not by symbols and concepts.—*A. P. Brogan* (Texas).

547. **Kao, C. F. *Gestalt* psychology.** (*Chinese*) *Educ. Rev.*, 1927, **19**, No. 4, 16.—After stating the motives in writing the article, the author discusses the fundamental principles of the *Gestalt* theory under the following heads: (1) configuration and element, (2) relative and absolute considerations, (3) natural and unnatural analysis, (4) intelligence and mechanism, (5) movement and perception of form, and (6) central and peripheral.—*S. K. Chou* (Stanford).

548. **McDowall, R. J. S. [Ed.]. The mind: a series of lectures delivered in King's College, London, during the Lent term, 1927.** New York: Longmans Green, 1927. Pp. xvi + 316. $3.00.—The purpose of this symposium is "to elucidate the various assumptions which students of different subjects make with regard to the nature of mind." Eight branches of knowledge are represented by as many different speakers, as follows: *Biology*, by Julian S. Huxley; regarding matter and mind as different aspects of a single reality, the speaker traces the changes undergone by mind in evolution. *Physiology*, by R. J. S. McDowall; mind is regarded as identical with brain processes. *Psychology*, by F. A. P. Aveling; the nature of our own mind, which we observe directly, compels us to recognize order in the external world and the existence of other selves where we observe behavior. *Psycho-therapy*, by J. A. Hadfield; the following aspects of mind are considered for the important light which psycho-therapy throws on them: mind's dynamic nature, its determinism, its autonomy, its extent. *Physics*, by F. A. Lindemann; considers how the physicist may free himself from mental presuppositions and derive principles that are truly objective. *Philosophy*, by W. R. Matthews; advocates a not too extreme idealist position with reference to mind and nature. *Education*, by J. Dover Wilson; mind is chiefly interesting for its capacity for development; the parental instinct is the germ of education. *Aesthetic*, by R. G. Collingwood; the function of mind is to create as well as to know; in the former process imagination plays an indispensable part. *Anthropology*, by C. G. Seligman; a comparison of mental traits and modes of thought of various races shows that minds are fundamentally alike. *Sociology*, by L. T. Hobhouse; mind is regarded as an original element of reality; a group mind does not exist, yet mind is the most important factor in maintaining an ever more extended social unity.—*J. T. Metcalf* (Vermont).

549. **Müller, A. Psychologie. Versuch einer phänomenologischen Theorie des Psychischen.** (Psychology. An essay on the phenomenological theory of the psychic.) Berlin and Bonn: Dümmler, 1927. Pp. 346.—In this book phenomenology, *Gestalt* theories, biology, structural theories, psychoanalysis, occultism, etc., come into their own. In the beginning the concept of consciousness is sharply defined by a study of the distinction between psychic and non-psychic. Colors and tones are treated not as sensations but as conditions which are sensed. From this whole problem complex a new theory is developed concerning the relations of mind and body, which no longer accepts stimuli as a basis. Since the psychology of relations, mathematical matter, thought, custom, art, and religion is dependent upon the type of the matter in question, this type is studied. These reflections also throw light on certain modern concepts, such as understanding, meaning, attitude, value. In the exposition of the association and arrangement of mental processes thought leads to the origin of the sense structures, in spite of the fact that psychology is looked upon as a natural science. After the study of the unconscious mind and the causality of the psychic with all its partial problems, the book concludes with the discussion of the mind as a total factor in which the solution of the problem of teleology is to be found. The last step, bound up with the foregoing, treats the problem of the "other mind" on the hypothesis of the "over mind."—*W. Wirth* (Leipzig).

550. **Overstreet, H. A. About ourselves: psychology for normal people.** New York: Norton, 1927. Pp. 300. $3.00.—Part I is a consideration of "evasional behavior": the tendency to avoid problems by regression, disease, fixating

at one or another of the life-levels, projecting one's own wishes into situations, by self-excuse, self-pity, paranoiac and microparanoiac behavior, moods of depression or over-activity, and by phobias of various sorts. Part II is a consideration of how an individual may face his problems rather than run away from reality. An attack is made on the present educational system, which does all it can to hinder wholesome psychological development and the formation of vigorous, expansive personalities. Education must so shape its program as to develop habits of mental curiosity, of seeking and meeting problems of reality, of interpreting and absorbing experiences in universal rather than particular terms. Music, science, poetry, thinking-conversations, humor, and the living out of emotions and ideas all contribute to liberation from "particularity." The supreme type of personality is "intercreative"; it draws toward other personalities and, through mental contact and mutual give-and-take, brings to birth ideas which it could not create alone. At the end of each chapter there are questions to stimulate further thinking on the subject.—*M. Goodrie* (Clark).

551. **Peterson, J. Equipment for the teaching of psychology.** *Psychol. Rev.*, 1927, **34**, 472–486.—Results of an investigation into the previous training of teachers of psychology, number of psychology books and periodicals, and laboratory facilities in educational institutions in the south. Two appendices give the letter addressed to the heads of the institutions investigated and the form of questionnaire to be filled out. This work is part of the program of the Southern Society for Philosophy and Psychology to improve the teaching of psychology in the south. A previous report of the committee in charge has been published in the *Psychol. Rev.* for 1926.—*H. Helson* (Kansas).

552. **Pierre-Jean, —. La descendance, l'hérédité, l'origine des caractères, la fécondation, la vieillesse. Théorie de la vie.** (Descent, inheritance, origin of characters, fecundation, old age. A theory of life.) Paris: Alcan, 1927. Pp. 240. 15 frs.—The author attempts to show the inconsistency of the physico-chemical or mechanistic theories and their incapacity to carry over to any of the facts of life the facts known outside of it. He conceives of consciousness as the essence of life, as a particular form of energy, an autonomous and irreducible cosmic factor. No bibliography.—*Math. H. Piéron* (Sorbonne).

553. **Plaut, F. Worte der Erinnerung an Kraepelin.** (Reminiscences of Kraepelin.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108**, 1–9.—(See Abstract 557.)—*W. Wirth* (Leipzig).

554. **Rogge, C. Homerisch** *φρήν, φρένες* **und Verwandtes in neuer medizinischer und sprachpsychologischer Beleuchtung. Ein Stück aus der Urgeschichte menschlicher Denkanschauung.** (New medical and psychological light on the Homeric *φρήν, φρένες* and related matters. A fragment of the early history of human thought.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 307–324.—The word *φρήν, φρένες* is used by Homer to indicate the seat of the mind. Evidence is adduced in favor of the view that this word refers to the lungs; not, as has hitherto been supposed, to the diaphragm. The author points out the origin of other Greek words referring to mind or mental states; all are ultimately traceable to the idea of the breath. Thus *θυμός* (anger, excitement) was originally "smoke", later "wind" or "storm"; *ψυχή* (soul) was "wind" or "breath"; *νόος, νοῦς* (thought, understanding) was initially "nose". The development of human ideas regarding the mind and the external world has taken place under the guidance of language. The science of language is therefore of great importance for psychology and philosophy.—*D. McL. Purdy* (California).

555. **Schmied-Kowarzik, W. Diltheys und Sprangers verstehende Psychologie in ihrem Verhältnis zur erklärenden (naturwissenschaftlichen) Psychologie.** (Dilthey and Spranger's *verstehende Psychologie* in its relation to explanatory (natural-science) psychology.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 281–306.—The author expounds and compares the proposals of Dilthey and

Spranger for a *verstehende* or *geisteswissenschaftliche Psychologie* as opposed to the existing form of psychology which copies the methods of the physical sciences. It is pointed out that the relation of Dilthey's system to orthodox psychology is rather different from that of Spranger's. Dilthey draws the antithesis between a "descriptive-analytic" and an "explanatory" psychology; Spranger between "higher" mental life (centered upon psychical structures of higher order) and "lower" mental life (centered upon external nature). Both types of *verstehende Psychologie* are analytic; not in the sense of a dissection of consciousness into elements, but rather of discrimination of aspects and appreciation of structure. The author holds that the essential distinction between *verstehende* and explanatory psychology is that the analysis contemplated by the former is of a logical character, leading to apodictic rather than assertoric judgments. Spranger's psychology is to be regarded as a relatively independent part of the analytic psychology formulated by Dilthey. But the division between this general analytic psychology and empirical psychology is absolute, not relative. Empirical psychology, however, is dependent on analytic, just as physics is dependent on mathematics.—*D. McL. Purdy* (California).

556. **Smallwood, W. M. Man,—the animal.** New York: Macmillan, 1927. Pp. xiv + 235. $2.50.—This is the second edition of Smallwood's discussion of the biological aspect of man. In it he shows how the fundamental laws of all protoplasm apply to man as well as to other animals, emphasizing especially these topics: (1) the cell as a unit, (2) energy and efficiency, (3) biogenesis, (4) reproduction, (5) heredity, (6) disease, (7) sensitivity and the nervous system, and (8) learning. He concludes by considering various phases of evolution.—*R. G. Sherwood* (Stillwater, Minn.).

557. **Spielmeyer, W. Kraepelin und die naturwissenschaftliche Forschung in der Psychiatrie.** (Kraepelin and the natural science method in psychiatry.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108**, 10–20.—This author and Plaut (see Abstract 553), both collaborators with Kraepelin, give a valuable sketch of his life, his character, the development of his ideas, and his program of scientific work.—*W. Wirth* (Leipzig).

558. **Storck, J. Man and civilization: an inquiry into the bases of contemporary life.** New York: Harcourt, Brace, 1927. Pp. v + 449. $2.75.—The purpose of this book is "the better understanding of the manner in which social structures and standards enter into and constitute the human individual." It is based upon results of recent study in the fields of psychology, anthropology, and sociology. Part I, *The World We Live In*, discusses biological structure and function, particularly as determined by environment. Social environment, or "culture", is compounded of institutions which satisfy the needs of human beings at a given time. Western civilization at present is characterized by the following institutions: natural science, mechanical invention, the national state, the historical attitude, mass education, democracy, and individualism. It is doubtful if there exist any complex innate behavior patterns. The individual is the product of as well as the producer of his culture, and the modern idea of man as a self-sufficient, thoroughly competent citizen is in need of urgent revision if democracy is to be effective under existing conditions. Part II, *How We Come to be What We Are*, traces mental development from birth to maturity, and describes normal and abnormal personality traits. Part III, *Human Nature and Social Complexes*, points out the facts that behavior patterns depend upon social routines; that the use of tools exemplifies the interdependence of individuals, the physical environment, and the social heritage; and that the values of both individuals and the group are formed by the interaction of impulses, group expectations, and natural facts. Part IV, *Contemporary Ways of Life*, is an analysis of such economic institutions as the family, art, science, and religion; and the ex-

tent to which they meet present day requirements for biological, physiological, and psychological well being.—*M. P. Montgomery* (Faribault, Minn.).

559. **Störring, G. Die Frage der geisteswissenschaftlichen und verstehenden Psychologie. Eine Streitschrift.** (The question of *verstehende* and mental-science psychology. A polemic.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 389–448.—In the first part of this paper the author summarizes Dilthey's critique of "explanatory" or "natural-science" psychology and his constructive proposals in favor of a "mental-science" psychology. Dilthey's arguments are then criticized point by point. In the second part the *verstehende Psychologie* of Jaspers is treated in a similar manner. Dilthey's polemic against "explanatory" psychology is shown to be applicable to an old-style associationism, such as that of J. S. Mill, rather than to the current form of the science. The hypotheses of "explanatory" psychology (psychophysical parallelism, mental elements, etc.), to which Dilthey objects, are shown to constitute a policy and not a creed. Dilthey's antithesis between a psychology "from without" and "from within" is invalid; the opposition between subject and object is relevant to the natural sciences but not to psychology. Both Dilthey and Jaspers found their systems on an antiquated and unreliable type of self-observation. The purely descriptive method advocated by Dilthey exposes one to the hazard of inferring general rules from singular instances. A direct experiencing of the "inner connection" between mental events is not possible in nearly so many cases as Dilthey supposes. If, with Dilthey, we were to confine ourselves to establishing bare "uniformities" rather than complete causal relations we should never arrive at a scientific psychology. Dilthey violates a first principle of methodology, laid down by Descartes: to proceed from the simple to the complex and not *vice versa*. Jaspers' distinction between "objective" and "subjective" psychology is not felicitous. There is no objective psychology which does not have the understanding of the mind as its ultimate goal. The "empathic understanding" of the experiences of other persons, as conceived by Jaspers, has no evidential guarantee and is open to the errors of analogical inference. Jaspers' is a somewhat refined form of popular psychology and not a scientific psychology. (To be continued.)—*D. McL. Purdy* (California).

560. **Tolman, E. C. A behaviorist's definition of consciousness.** *Psychol. Rev.*, 1927, **34**, 433–439.—Whenever an organism at a given moment of stimulation shifts from being ready to respond in some relatively less differentiated way to being ready to respond in some relatively more differentiated way, there is consciousness.—*H. Helson* (Kansas).

561. **von Bertalanfy, L. Über die Bedeutung der Umwälzungen in der Physik für die Biologie.** (On the meaning of the revolution in physics for biology.) *Biol. Zentbl.*, 1927, **47**, 653–662.—Biology viewed from the theoretical attitude has taken over from physics concepts that are no longer valid in physics itself, and hence questionable. Mechanism, or better machineism, is based on a type of causality that no longer exists in the physicist's world. Among other things, there is nothing in positivistic teleological concepts out of keeping with the modern physics. Hence, the mechanism that characterizes much of biology must be reconsidered in the light of modern scientific theory.—*J. F. Brown* (Yale).

562. **Wentscher, E. Gedanken zum Ich-Problem.** (Thoughts on the ego-problem.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 257–280.—The problem of the nature of the psychical subject is the ultimate goal of all psychological research; yet it is much neglected, and in fact the self is frequently regarded as a secondary psychical phenomenon rather than a fundamental moment in experience. All feeling, voluntary imagination, thought and will involve the self as an inseparable component. The problem of the nature of the ego was first examined by Locke,

though in confused fashion. Hume attempted to explain the self as a product of memory, and later association psychology followed him. J. S. Mill, however, analyzed the facts with keener insight and showed that memory does not account for the self; on the contrary, the self is required in order to account for memory. Every act of comparing or relating which is involved in the thought processes presupposes a subject; a judgment on the relation between two mental contents A and B is possible only if it is the same subject which has been affected now by A and now by B. The Würzburg school have shown that activity is the essential factor in thought; this activity consists in the setting to oneself of a problem to which one's thoughts must conform. "Problems are not set to the sensations, feelings and ideas but to a self" (Külpe). The facts of "split personality" seem at first to controvert a subject psychology; but K. Oesterreich has shown that the facts, far from disproving a subject psychology, demand it for their explanation. We must assume a persisting self in order to account for the patient's awareness of his own hallucinated condition. The author assumes with E. Becher that the mind exerts a guiding influence on the nervous processes in the cerebrum such as to make them conform to its purposes. The self, though it maintains its identity, is capable of change; but such change consists in the unfolding of factors which are implicit in the self.—*D. McL. Purdy* (California).

563. **Wirth, W. Emil Kraepelin zum Gedächtnis!** (In memory of Emil Kraepelin.) *Arch. f. d. ges. Psychol.*, 1927, **58**, i–xxxii.—Emil Kraepelin (1856–1926) was "the great systematist of psychiatry." Complete bibliography of Kraepelin's writings.—*D. McL. Purdy* (California).

564. **Wong, C. The psychology of Wong Yang-Ming.** *Chinese J. Psychol.*, 1924, 3, No. 3, 17.—After a short presentation of the life of this Chinese philosopher (1472–1528) of the Ming dynasty, one of his chief works was analyzed objectively with the aim of formulating his viewpoint toward psychology. 392 passages containing the Chinese word "Hsieng" for mind or heart were gathered and classified into six groups, namely, will, attention, feeling and emotion, mind or consciousness, thought and judgment, and physiological heart. 18 more duplicated passages were also included, making in all 410 passages. The following percentages for the different groups were found:

Will	42.0%	50.3%	74.7%
Attention	8.3%		
Feeling and emotion	24.4%		
Mind or consciousness	22.2%		
Thought and judgment	2.5%		
Physiological heart	0.5%		
Total	99.9%		

All expressions containing the word "Hsieng" were traced back to three different sources, those that come from the older classics, those that come from everyday speech, and those that come from the philosophy of the Sung and Yuan dynasties and from Buddhist texts. What Wong Yang-Ming conceived as mind consists of 74.7% will and feeling and emotion. The conclusions drawn from this study are five: (1) the word "Hsieng" is most frequently interpreted as will both in everyday speech and in the older classics; (2) when it refers to mind or consciousness, it comes from the philosophy of the Sung and Yuan dynasties, which is Wong Yang-Ming's own philosophy; (3) Wong Yang-Ming's psychology is an outcome of putting together the theories of the older classics and everyday speech, the philosophies of Sung and Yuan dynasties, and the sayings in the Buddhist texts; (4) Wong Yang-Ming's psychology is greatly influenced by Buddhism, his fundamental conceptions being from Indian metaphysics; (5) because of the fact that his conceptions come from three different sources, Wong

Yang-Ming's system of psychology is not unified and harmonious. The final conclusion reached by the author is that Wong Yang-Ming's psychology is not scientific but metaphysical.—*S. K. Chou* (Stanford).

[See also abstracts 642, 667, 721, 760.]

SENSATION AND PERCEPTION

565. **Bartels, M. Ophthalmostatik und Ophthalmokinetik.** (Ophthalmostatics and ophthalmokinetics.) *Alb. Graefes Arch. f. Ophth.*, 1927, **118**, 270-284.—A general survey of the subject of ocular movement and fixation, with especial reference to comparative physiology. The stimuli which affect the tension of the eye-muscles are divided into four classes: (1) "sensible" stimuli (derived from the skin, muscles, etc.), (2) light-stimuli, (3) vestibular stimuli, and (4) central (automatic or fixation) stimuli. After a separate consideration of each type of reflex, the combined activity of eye-movement reflexes is discussed. General explanatory principles to elucidate the wide variety of eye-movement mechanisms in the animal kingdom are not yet at hand. The law that functional demands develop organic capacities cannot be verified in the case of eye-movements.—*D. McL. Purdy* (California).

566. **Bose, G. Is perception an illusion?** *Indian J. Psychol.*, 1926, **1**, 135-152.—No perception being possible without some definite "action attitude" in the perceiver, it follows that if we are able to remove the "action attitude" with regard to an object perception disappears from consciousness. Conversely, in adaptation such as occurs, for example, when one is oblivious of the pressure of his spectacles upon his nose, perception disappears because the "action attitude" has lost its significance. In all hallucinations and illusions an unnoticed "action attitude" is the responsible factor, and the greater the mental domination of such an attitude the more inevitable the hallucination or illusion. Any illusion may be corrected by adjusting the "action attitude." The direction of attention in perception may be either toward the external object or the subjective changes produced by it. In visual perception, the reference is largely objective, while in tactual, gustatory and olfactory perceptions the reference is ordinarily subjective. Kinaesthetic perceptions are elusive, but generally subjective, while auditory perceptions lie midway between the visual and tactual. In psychoneurosis—notably in dementia præcox—objectification disappears and perception becomes a process of subjective reference and interpretation. Similarly, localization may be either subjective, as in smell and taste, or objective as in touch, and since both the subjective and objective phases of a perception are invested with distinct "action attitudes" it is apparent that illusions and hallucinations are possible both in subjective and objective perceptions, and if these "action attitudes" can be neutralized, perception must disappear from consciousness. Reasoning from a series of twelve experiments involving very careful introspective analysis of the failure of perception in sentient surfaces, the writer reaches a thesis that perception is an illusion due to the influence of "action attitudes." An incidental development in these experiments was the emergence of a law of "localization" which suggests that "the localizing capacity of any part of the skin varies inversely with its aesthesiometric index." In similar experiments in normal perception, he finds that the original objective spatial attribute vanishes, that the perception has no real localization, and that the attributes of intensity, clearness, duration, and quality are all illusory. The "action attitude" tendency to relate an experience with the past is responsible for the origin of attributes in a sensation, and when this tendency is neutralized the perception loses its link with all other perceptions and merges into "pure consciousness." The writer has been

able to achieve this neutralization in the case of tactile, kinaesthetic, gustatory, and olfactory perceptions. Auditory and visual stimuli prove the most difficult to isolate.—*L. A. Averill* (Worcester Normal).

567. **Dimmick, F. L. The investigation of the olfactory qualities.** *Psychol. Rev.*, 1927, **34**, 321–335.—First occurs a brief summary of the attempts to verify Henning's smell prism and the changes in Henning's own work with his treatment of his critics. The author then shows that whereas there is 95% agreement among O's and with theory in classifying colors, he found only 25% agreement among O's and 40% agreement with theory when he came to odors. When O's were asked to arrange odors in series, linear forms were most frequent (59%); numerous closed figures, such as triangles, squares and circles (28%), and several sets of disconnected and radiating lines (13%) were found. With a more careful technique than has been used heretofore, by which associative and "object" cues were eliminated, the O's were able to attain a fairly high degree of agreement in their judgments after a moderate amount of practice. Descriptions of the odors showed that some odors have a definite temporal course, some persist in a characteristic way during presentation, independently of their intensities, and certain adjectives like "sharp," "smooth," "flat," and "clear" occur frequently and seem to be more descriptive than class references. The descriptive categories included a report on volume, brightness, texture, complexity, localization, analogy, affective tone, intensity, object and class. Only the first five categories may be taken as essentially descriptive of odors, the others being rather devices to evade the descriptive task. The experimental results show that Henning's olfactory classes and the lack of agreement with respect to them have been due to insufficient control of the presentation of the stimuli and to the non-descriptive nature of the olfactory categories with which most of the O's have worked.—*H. Helson* (Kansas).

568. **Ellis, F. W. Secondary excitation of the retina and the variation of the intensity of the resulting sensation.** *Amer. J. Physiol.*, 1927, **82**, 290–293.—Description of the pale blue arcs, reported previously by Ladd-Franklin, Amberson and Troland, occasioned when observation is made in a dark room of a small spot of light which falls on the temporal side of the macula near the fovea.—*M. J. Zigler* (Wellesley).

569. **Engelking, E., & Hartung, H. Spektraluntersuchungen über die Minimalfeldhelligkeiten des Tritanomalen und seine Unterschiedsempfindlichkeit für Aenderungen der Helligkeit.** (Spectroscopic studies of the minimal-field brightnesses of a tritanomalous subject and his differential sensitivity for brightness.) *Alb. Graefes Arch. f. Ophth.*, 1927, **118**, 211–220.—Tritanomaly, a new type of anomalous trichromasy, was first described by Engelking (*Arch. f. Ophth.*, 1925). The authors have determined the brightness of the spectrum for a normal trichromat and a tritanomalous person by the minimal-field method under conditions of light-adaptation. The brightnesses were the same for both for wave-lengths above 454 $\mu\mu$. The apparatus did not permit the use of wave-lengths below 454, but the earlier observation of a shortening of the spectrum makes it probable that the tritanomalous brightnesses are slightly below normal for very short wave-lengths. The differential sensitivity for brightness is rather less than that of the normal trichromat.—*D. McL. Purdy* (California).

570. **Forbes, H. S., & Forbes, H. B. Fetal sense reaction: hearing.** *J. Comp. Psychol.*, 1927, **7**, 353–355.—As Peiper had done, the author has offered evidence of the fact that a human fetus, 30 days before delivery, will respond to a sudden, loud noise, whether by hearing or touch is undetermined. A pregnant woman, in the bathtub, becomes aware of the fetal movement when the side of the tub is violently struck. She herself is calm; even her skin does not move. The movement of the fetus is independent of effects from her breathing movements. Eight days after the child is born, while feeding at its mother's breast,

it takes notice of a distant gong, by flattening its ears against its head and by stopping feeding; after the gong has ceased, the baby resumes its feeding.—*H. R. Crosland* (Oregon).

571. **Hoelzel, F. Central factors in hunger.** *Amer. J. Physiol.*, 1927, **82**, 665–671.—Cannon and Washburn, and Carlson regard hunger as a phenomenon of peripheral origin. The view is here advanced that it is centrally initiated. The evidence for this view was obtained by suppressing the desire to eat by excessive food consumption and observing that the subsequent hunger contractions lacked the essential qualities of hunger sensations. Moreover, after more or less prolonged abstinence from food, hunger sensations appeared when gastric contractions did not take place. Hunger is here regarded as a drive, centrally motivated, which is rather motor than sensory in nature.—*M. J. Zigler* (Wellesley).

572. **Johnson, G. L. Two curious optical illusions.** *Arch. Ophth.*, 1927, **56**, 465–468.—An illusion of the reversal of motion and another to be classified with the autokinetic phenomena are described.—*C. W. Darrow* (Institute for Juvenile Research).

573. **Kravkov, S. W. Über die Helligkeits- und Adaptationskurven der total Farbenblinden.** (On the luminosity- and adaptation-curves of the totally color-blind.) *Alb. Graefes Arch. f. Ophth.*, 1927, **118**, 285–291.—Three totally color-blind subjects were tested. They had diminished visual acuity, pronounced nystagmus, photophobia and weak pupillary reaction. Whether they had central scotoma is not known. Their distribution of brightnesses in the spectrum was determined with a Helmholtz color-mixture apparatus, and the results were expressed in terms of an equal-energy spectrum. On one subject a dark-adaptation test was made with the Nagel adaptometer. Results: (1) The spectrum is decidedly shortened at the red end. (2) The maximum brightness in the equal-energy spectrum is in the green, at 526 to 516 $\mu\mu$. (3) The distribution of brightnesses does not vary with adaptation. (4) The speed of adaptation is considerably less than that associated with normal vision. (5) The photophobia of the totally color-blind is explicable by the weakness of their pupillary reaction. G. E. Müller's explanation is thus rendered superfluous. He holds that cone-activity inhibits the formation of visual purple, and that the absence of inhibition in the totally color-blind results in an abnormal velocity of purple-formation. This theory is contradicted by the above data on dark-adaptation. These data are in fair agreement with Lasareff's mathematical theory of the kinetics of the visual purple.—*D. McL. Purdy* (California).

574. **Kreiker, A. Über das Aubert-Förstersche Phänomen auf Grund experimenteller Untersuchungen nebst einigen Bemerkungen über die Eigenschaften des Gesichtsfeldes.** (An experimental study of the Aubert-Förster phenomenon, and some remarks on the properties of the visual field.) *Alb. Graefes Arch. f. Ophth.*, 1927, **118**, 292–310.—According to the Aubert-Förster law, the visual acuity of the periphery is dependent, not only on the visual angle subtended by the test-object, but on the distance between object and observer. Smaller and nearer objects are cognized within wider eccentric limits than larger and correspondingly more distant objects. This is a paradoxical state of affairs, contradicting the principle that like psychical states always accompany like physiological states. But the experimental results of Aubert and Jaensch establishing this law can be attributed to their peculiar type of test-object (double square). The observer has great difficulty in making judgments on such an object, and is likely to base them on secondary criteria. For dependable results, only such objects can be used as permit a double control of judgments, i.e., from the side both of observer and experimenter. Landolt rings, Ammon figures, etc., fulfill this requirement. The author distinguishes three types of visual perception: (1) elementary perception (characteristic of the periphery), which is a

perception merely that "something is there"; (2) relative cognition, which is uncertain both subjectively and objectively; (3) absolute cognition (characteristic of the center). In the experimental work, a test-object of the appropriate type was used; the object was moved inward from the extreme periphery and a determination made of the angular eccentricity at which relative cognition becomes errorless. This angle was the same no matter what the distance of the test-object from the observer. There was no trace of an Aubert-Förster phenomenon either in the center or the periphery. Further experiments with the double square as a test-object showed that in consequence of erroneous estimation of distance, a more or less pronounced Aubert-Förster phenomenon sometimes appears, but this has nothing to do with the visual act proper.—*D. McL. Purdy* (California).

575. **McIndoo, N. E. Smell and taste and their applications.** *Scient. Mo.*, 1927, **25**, 481–503.—A true science of smell and of taste has not yet been developed. Smell discrimination has been little cultivated in man, much higher capacities in this line being shown by many animals from mammals to insects. Some economic aspects of odors as a means of control of insects are pointed out. Several figures are presented.—*J. F. Dashiell* (North Carolina).

576. **Mitra, S. Some experiments on Fechner's paradox.** *Indian J. Psychol.*, 1926, **1**, 153–164.—The purpose of these experiments was to find out as approximately as possible the position of the "indifference point" in the perception of brightness in a visual field. The apparatus used consisted of two color wheels, one so arranged that definite changes in the sectors of the rotating papers could be introduced during rotation. Black and white paper discs were employed throughout these experiments, which were performed at Leipzig University under the guidance of Professor Kirschmann, who himself acted as one of the observers. By so placing the two wheels that when one was in the line of vision 30 cms. from the eye of the subject, the other—the adjustable one—was seen only in indirect vision, it was possible to record a series of judgments concerning the comparative brightness of the directly seen and indirectly seen discs. By manipulation of the variable wheel the experimenter arrived at two brightnesses which were declared equal by the observer. Scale measurements of the excess or defect of white both with one eye and with both eyes were read, and the following chief conclusions were reached: (1) When the absolute brightness is small (3.16 to 4.25) we see with both eyes darker than with one eye, but when the brightness passes a certain limit (6.41) we see brighter with both eyes than one. (2) There are two ranges of brightness (5.32 to 6.41 and at about 20.5) which retain the same intensity when seen binocularly as monocularly.—*L. A. Averill* (Worcester Normal).

577. **Petit, E. Transmission properties of some filters.** *Astrophys. J.*, 1927, **66**, 43–58.—Some 75 transmission curves of various substances to visible, ultra-violet, and infra-red light are given, along with observations on significant effects of various wave lengths.—*C. W. Darrow* (Institute for Juvenile Research).

578. **Piéron, H. De l'inefficacité de l'adaptation thermique au point de vue des seuils de brûlure.** (On the inefficacy of thermal adaptation from the point of view of thresholds of burning.) *C. r. Soc. biol.*, 1927, **97**, 1230.—Thermal adaptation consists in the realization of a state of equilibrium in cutaneous temperature. Does this adaptation to heat or cold change the threshold of burning? Experience shows nothing to this effect; the threshold of burning remains definitely fixed at about 45° C. This is in accord with the presence in painful sensibility through cutaneous overheating of an entirely different mechanism from that in sensibility to heat. Pain by burning must be confined to a thermal level defined by a certain receptive region, and not to a variation of level, like the sensation of heat or cold.—*Math. H. Piéron* (Sorbonne).

579. **Rodrigue, G. La perception.** (Perception.) *Psychol. et vie*, **1**, No. 4, 9–11.—To perceive, says the author, is to remember and to imagine, in a practical synthesis of the past which is utilized and the future which is realized. Percep-

tion is, then, both synthetic and potential; it measures the field of our possible action; it is also preparation, anticipation and construction.—*Math. H. Piéron* (Sorbonne).

580. **Sacher, A. Beitrag zur Lehre der professionellen Schwerhörigkeit. Die Taubheit der Kesselschmeide.** (Contribution to the knowledge of occupational auditory defects. The deafness of boilermakers.) *Monatssch. f. Ohrenhk.*, 1927, **61**, 337–359.—Of workers in the boiler factories of Leningrad 78.4% suffer some involvement of hearing. Of these 82.7% suffer from disease of the inner and only 17.3% from injury to the middle ear. The condition is aggravated with duration of service: after ten years one-half of the workers have lost their hearing, while after twenty years 80% have been similarly affected. It is said that stuffing the ears with cotton affords little protection.—*C. W. Darrow* (Institute for Juvenile Research).

581. **Valentine, W. L. Note on the "binaural beat."** *J. Comp. Psychol.*, 1927, **7**, 357–368.—The author has investigated the ambiguities of "phantom sound," its accompanying beat, and monaural and binaural beats in the experience of localizing sounds. He has employed two sound-proof boxes, one of them consisting of two cells, one 2.5 feet in each dimension and the other 1.8 feet in each. The smaller was placed in the larger, with the space between filled with sand and sawdust. A refrigerator-like door lid was fitted on the box. So effective was the apparatus and technique that when a binaural was presented to the stopped ear, the tone was inaudible to the other ear. 11 naïve and 3 experienced subjects served, each being observed for a period of 45 minutes. The net result of the investigation was to the effect that very few of the observers obtained the supposed rotation of the sound around the head to the opposite side. The trained subjects did obtain, however, a shift from ear to ear. Two lateral maxima were inside the head; Stewart's third or in-between maximum was not heard, nor was a secondary lateral maximum. Bibliography of 47 titles.—*H. R. Crosland* (Oregon).

582. **Wilkinson, O. Strabismus, its etiology and treatment.** St. Louis: Mosby, 1927. Pp. 240. $10.00.—*W. S. Hunter* (Clark).

[See also abstracts 623, 624, 636, 655, 789, 803.]

FEELING AND EMOTION

583. **Marston, W. Primary emotions.** *Psychol. Rev.*, 1927, **34**, 336–363.—Current names for emotional states in psychological literature are little more than literary circumlocutions. Physiologists also use these names in poorly defined ways. Moreover, something more than a statistical treatment of emotional stimulus-response situations must be given. Standardization of stimulus does not standardize response. The true receptors for emotions, which must be identically stimulated to produce comparable results, lie in the integrative mechanisms, not in the sense organs at the surface of the body. Three points of experimental technique are stressed. We must postulate tentative basic emotional response patterns, in terms of which the preliminary analysis of emotional response may be made, and which may be further described and defined as the facts warrant. The author suggests the following basic types of emotional response to furnish workable hypotheses for experimental determination of true primary emotions: (1) *dominance:* the stimulus consists of domination of reaction by the stronger antagonist, while the response is a strengthening of the reaction to dominate the antagonist; (2) *compliance:* the stimulus is the compliance of an object with the organism by adequately stimulating its existing reflexes, and the response will be a strengthening of reactions, elicited by the object, leading the organism to comply with the object by reacting to it without seeking to change

its nature; (3) *submission:* the stimulus is submission by weaker individual to control of responses by subject, and the response consists of weakening reactions to permit their control by another individual; (4) *inducement:* stimulus here is the inducement of subject to yield control of his reactions to another individual, while the response lies in a strengthening of the other individual's control of the subject, in order to induce the other to yield control of his reactions to the subject. Fear, love and rage are analyzed in the light of this classification, and the author mentions certain advantages of his approach.—*H. Helson* (Kansas).

584. **Roberts, H. R. Variation in melodic renditions as an indicator of emotion.** *Psychol. Rev.*, 1927, **34**, 463–471.—Careful analysis of eleven Indian songs committed to the phonograph record led to certain conclusions regarding the singer, manner of recording, etc., which were verified or corrected by the field worker who made the records. Final conclusions are as follows: at first, and when comparatively fresh and singing songs he liked, the singer betrayed a marked tendency to attenuate both up and down trending melodic curves, involving both sharping and flatting. Later the tendency toward attenuation lessened distinctly in favor of acuation of the curves as the singer became tired, and especially when singing five repetitions of the final song, which he disliked. The author suggests the possibility that these tendencies toward melodic attenuation and acuation are unconscious expressions of the emotions of pleasure and irritation, and that acuations of upward melodic curves imply the same emotional situations as acuations of downward melodic curves. Possibly such phenomena may be observed in connection with other groups in connection with emotional disturbance.—*H. Helson* (Kansas).

585. **Sherman, M. The differentiation of emotional responses in infants. II. The ability of observers to judge the emotional characteristics of the crying of infants, and of the voice of an adult.** *J. Comp. Psychol.*, 1927, **7**, 335–351.—The problem was (1) to determine the ability of judges to detect the emotion intended to be portrayed by a trained vocalist, and (2) to detect the emotions of infants under 12 days of age by their crying. The observers, graduate students in psychology, 2d and 3d year medical students, and student nurses who had had experience with infants, varied in number from 23 to 32. The stimuli were delay of feeding by 10 or 15 minutes, being dropped a distance of one foot, restraining of the face on the table, and four needle pricks. The judges varied widely in their decisions; 11 emotions were named, the most frequent being colic, hunger, pain, and fear. Cries enduring 2 or 3 minutes, then subsiding, and increasing in intensity rhythmically, suggested hunger. A sharp, loud cry of short duration suggested pain. When however the crying was long, intermittent, subsiding, and recurring with sudden intensity, it was judged as being due to colic. In the second part of the experiment, a trained vocalist denoted a certain emotion by repeating behind a screen a single note five times, each time for a period of 1½ seconds, in a constant loudness and pitch. The emotions which attempts were made to depict were surprise, fear and pain, sorrow, and anger and hate. In general the judges named 22 emotions for the above 4; but 18 of 22 judges correctly named sorrow, and 12 of 14 correctly named anger and hate. Six tables, one figure, and one reference.—*H. R. Crosland* (Oregon).

586. **Washburn, M. F. Feeling and emotion.** *Psychol. Bull.*, 1927, **24**, 573–595.—A review of literature of 81 titles. There is a general tendency to hold to theories of pleasantness-unpleasantness in terms of tension or active striving. Difference of results and of opinions obtain on the questions of objectification of P–U, on mixed P–U, etc. Effects of P–U on striped and on smooth muscular processes, and on learning and recall, have had experimental attention, as has the problem of color preferences.—*J. F. Dashiell* (North Carolina).

[See also abstract 538.]

ATTENTION, MEMORY AND THOUGHT

587. **Fisher, V. E. A few notes on age and sex differences in mechanical learning.** *J. Educ. Psychol.*, 1927, **18**, 562–564.—A substitution test "was used wherein the individuals were required to write certain digits in geometrical characters arranged in horizontal rows, mixed order, on regular-sized sheets of paper." The characters consisted of an equilateral triangle in two perspectives, a square, a diamond and a U-shaped figure. Data were collected from about an equal number of male and female subjects, from age 9 to adulthood, there being from 13 to 30 at each age. There is a fairly uniform rate of improvement in the girls from 9 to 13 and in the boys from 9 to 14, after which ages there are losses in efficiency. Boys are superior at ages 9, 10, 14, and 15, while girls are superior at ages 12, 13, and 16. There is a tie at age 11.—*A. M. Jordan* (North Carolina).

588. **Leiner, M. Experimentelle Untersuchungen der geistigen Arbeitsleistungen von Schülern höherer Lehranstalten.** (Experimental researches on the mental work of pupils in higher schools.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 187–229.—180 gymnasium students were required to add figures for a 45-minute period on each of two successive days. Their output during each three minutes was noted. No practice intervened between the two periods. The individual work curves were of two types: (1) those with a continual rising tendency, and (2) stationary or falling curves. 85% of all were of the first type and 15% of the second. The large oscillations which characterize the individual curves are eliminated when a curve of means is plotted. The mean curve has three principal phases: (1) a pronounced drop between the first and second three-minute intervals, (2) a rapid rise continuing for 24 minutes, (3) a weak and fluctuating rise (with slight final drop) during the last 18 minutes. The curve for the second day has similar phases, but the initial drop is steeper and the succeeding rise more gradual; the highest output is produced in the first three minutes. The lowest output is higher than the maximum for the first day. Theory: The high output at the start is due to excitement and a feeling of competence to the task. In general, the mean curve is determined by the antagonistic factors practice and fatigue. When there is no previous practice, both factors increase in such a manner that the gain due to practice is offset by the loss due to fatigue in half an hour; thenceforth fatigue preponderates. Fatigue during the first trial explains the uniform inferiority of output as compared with the second day's. Whereas fatigue increases more and more rapidly, practice approaches a limit; this was reached during the second trial. Mathematical formulæ for the rates of practice and fatigue are proposed. The pupils fell into three age-types: (1) From 11 to 12 one finds high fatiguability, unevenness of output, and lack of concentration. (2) From 12 to 16 quantitative capacity, endurance, and concentration are superior, but quality remains at the same level. (3) From 17 onwards there is low fatiguability and a distinct improvement in accuracy: a general approach to the adult type.—*D. McL. Purdy* (California).

589. **Meredith, G. P. Consciousness of method as a means of transfer of training.** *Forum Educ.*, 1927, **5**, 37–45.—By means of initial and final tests in defining ordinary words, transfer effects due to differences in training in science definitions were sought. Three groups, equated for general mental ability, were compared after (Group A) no training in science, (Group B) three laboratory demonstration and discussion lessons producing definitions in the field of electricity and magnetism, and (Group C) the same lessons plus discussion of the essentials of a good definition. Final scores showed marked superiority of Group C in improvement in the definition of the ordinary words.—*K. M. Cowdery* (Stanford).

590. **Segond, J. La confiance et la suggestion.** (Confidence and suggestion.) *Psychol. et vie*, **1**, No. 4, 11–13.—There are social factors of belief which

can be recognized in all our convictions. Confidence and suspicion are not innate and mysterious tendencies, but the double indication of our more or less perfect harmonization with those in our environment or even with our ego.—*Math. H. Piéron* (Sorbonne).

591. **Skawran, P. Experimentelle Untersuchungen über den Willen bei Wahlhandlungen.** (Experimental researches on the will in choice-actions.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 95–162.—A continuation of the work of S. Trouet (*Arch. f. d. ges. Psychol.*, 1923). In Trouet's experiments the subject had to select the appropriate response to the experimenter's command from four possibilities: (1) a maximal pull upon an ergograph, (2) a medium pull, (3) a weak pull, and (4) pressure of a simple key. Attempts were made to obtain an introspective analysis of the volitional process. In such an experiment, however, the process is so mechanized that the mental events constituting specific choice and decision do not come to light. Skawran has introduced a modification: The reading on the ergograph scale, representing his average response to the commands "strong," "medium" and "weak," respectively, was determined for each observer by preliminary trial. In the experiments proper, then, when commanded to pull with (e.g.) "medium" force, the subject's purpose must be to approach as closely as possible to his *average* value for "medium." These conditions approximate those accompanying volition in everyday life. But conclusions drawn from these "complex" volitional acts cannot be forthwith applied to "simple" acts. In the complex acts of this experiment one can distinguish: (I) the preparation (a general or undifferentiated will-decision); (II) the act of volition, comprising: (1) the will to the end, (2) thoughts, ideas and judgments, (3) feelings and strain-sensations, (4) the choice, which is based on thoughts, ideas, judgments and feelings, (5) the decision proceeding from the choice; (III) the voluntary action, comprising: (1) transformation of the act of volition into bodily action, (2) the psychical situation after the action. The general volitional decision appears in dim consciousness in the preparatory period. It facilitates the reproduction of ideas favorable to the act, and inhibits unfavorable ideas. The will to the end (acceptance of the goals represented in these ideas) inaugurates the second period; it exerts an appropriate facilitatory and inhibitory influence. Thoughts, ideas and judgments have no direct causal effect in the volitional process. Feelings, and especially sensations of tension, are par excellence the active force producing the voluntary decision. The act of choice *per se* does not involve judgment or acceptance. The stage wherein decision is transformed into action eludes self-observation. The author believes that we can justly conclude that all volitional decisions are to be attributed, in greater or less degree, to feelings and strain-sensations.—*D. McL. Purdy* (California).

592. **Smith, F. O. Differential reactions of human beings in the maze.** *Ped. Sem.*, 1927, **34**, 394–405.—The maze problem as ordinarily set is such as to preclude any use of insight in addition to trial and error, even for human subjects. In this study pencil mazes were used permitting the subject to see a very little ahead of his pencil, one maze being of non-sequential type, the other of a type constructed on a single definite principle. Initial trials were generally of a trial and error sort; but in later trials rational methods entered: attempt to memorize turns, looking ahead for openings and directions, formulating a plan of the maze, etc. Thus, when conditions permit, human subjects tend to react to a maze as a total situation and therefore with insight.—*J. F. Dashiell* (North Carolina).

593. **Sullivan, E. B. Attitude in relation to learning.** *Psychol. Monog.*, 1927, **36**, No. 3.—Two attitudes were investigated: (1) an intellectual attitude, aroused in the subject by his knowledge that a generalization about the material to be learned is possible; (2) an emotional attitude, brought about by inducing the subject to believe that he is better or worse than other members of his group.

(1) Three variations in the intellectual attitude, described as Methods, I, II, and III, were studied: in Method I no information was given that a generalization was possible; in Method II direct information was given that a generalization was possible and would be asked for; in Method III the subject was told that a generalization would be given by the experimenter. The learning material consisted of geometric figures and nonsense syllables, and the complicating factors were introduced by variations in relative position, size, and color. The subjects were children, adolescents, and adults. Among other results the following are noted: with children, generalization is less successful and time required is longer with Method I; intelligence is an important factor in determining chance and speed of generalization; when adults are given learning material of different degrees of complexity the chances of learning are equal with all three methods when the material is simple; the chance of learning complex material is less with Method I than with the other two methods; Method III is less efficient for total recall than Method I. (2) In the experiments concerned with emotional attitudes the subjects were two groups of adults, superior and inferior, and a group of children. The adults were given nonsense syllables; the children were given a task in motor learning—the problem set by the Miles pursuit pendulum. Results show that the time required to learn a memory series is increased by knowledge of failure and decreased by knowledge of success; women are more affected than men; subjects for whom the task is difficult are more affected than subjects for whom it is easy; subjects of high intellectual capacity are more affected by knowledge of failure, subjects of low capacity by knowledge of success; certain adaptations are made by adult subjects in the case of continued failure report.—*F. A. C. Perrin* (Texas).

[See also abstracts 673, 748, 807.]

NERVOUS SYSTEM

594. **Angulo y Gonzalez, A. W. The motor nuclei in the cervical cord of the albino rat at birth.** *J. Comp. Neur.*, 1927, **43**, 115–142.—In the cervical cord of the new-born albino rat there is no segmental arrangement of the motor cells corresponding to the segmental arrangement of the spinal motor nerves. As seen in cross-section, the motor cells form relatively well-defined groups; in longitudinal sections, they form more or less continuous columns. Some of these columns extend throughout the length of the cervical cord; others terminate in the cervical enlargement. It is believed that progressive morphological differentiation of skeletal musculature is associated with the progressive embryological development of these cell columns. The author suggests that an accurate comparative study of the early embryological developments of the animal is needed to form a basis for understanding the significance of the specialization and functional activity of these cells. 16 figures.—*C. P. Stone* (Stanford).

595. **Bucy, P. C. The nictitating membrane and the superior cervical ganglion in the rabbit.** *J. Comp. Neur.*, 1927, **43**, 221–230.—The results of a series of experiments on rabbits were negative so far as concerns determining the innervation of the nictitating membrane in the rabbit. They did show, however, that this membrane is not under the control of the superior cervical ganglion, despite the generally accepted view to that effect, and that it is not controlled by the facial nerve. It is suggested that the next approach to locating the nervous control of nictitation in the rabbit should be made by a study of the Gasserian ganglion and its connections, or of the abducens nucleus and its accessory nucleus. —*C. P. Stone* (Stanford).

596. **Detwiler, S. R. The transplantation of the medulla oblongata into the brachial region of the cord in *Amblystoma* embryos.** *J. Comp. Neur.*, 1927, **43**,

143–158.—This study is a continuation of previously described research on the development of various portions of the embryonic neural tube when grafted into new regions. In very young embryos a piece of the cord between the anterior border of the fourth somite and the caudal border of the sixth was removed and a piece of medulla from another embryo of corresponding age was grafted into the excavated region. The number of animals operated upon was 110 and the number of cases surviving two or more days was 51. Various approximations to normality in development were reached by different individuals. In general, the degree of cellular proliferation throughout the graft corresponded to what normally characterizes the segments that have been replaced. When, in previous experiments, the anterior end of the spinal cord was put into the same region, however, the extent of cellular proliferation was much greater than in a similarly placed medulla. Thus the results of the experiments show that position alone does not determine the number of cells proliferating in the graft. Among other agencies, something inherent in the segment appears to govern cell proliferation. These causes, whatever their nature, appear to be bound up with the development of behavior patterns normally associated with the neural functions of specific regions. Many of the physical deformities and defects in swimming movements were attributed to faulty motor innervation of the myotomes, necessary to the development of motility. Incomplete peripheral innervation rather than central defects appeared to account for defective limb functions. Ears transplanted with the medulla reached various stages of differentiation. In some instances sensory hair cells developed and were innervated by branches from the transplanted acoustic ganglion. 8 figures.—*C. P. Stone* (Stanford).

597. **Gerard, R. W. The respiration of nerves in oxygen and nitrogen.** *Amer. J. Physiol.*, 1927, **82**, 381–404.—Manometric measurement of the oxygen consumption of a resting frog's sciatic nerve, determination of the respiratory quotients of resting and of active nerve metabolism, and determination of the ability of a nerve to continue activity for some time in the absence of outside oxygen, owing to the presence in the nerve of an oxidizing reserve.—*M. J. Zigler* (Wellesley).

598. **Gurdjian, E. S. Studies on the brain of the rat. II. The diencephalon of the rat.** *J. Comp. Neur.*, 1927, **43**, 1–114.—A detailed and comprehensive study of cell masses and fiber tracts of the diencephalon of the rat's brain. Figures are drawn from transverse, coronal, and sagittal sections and locate the chief cell masses and fiber tracts. The exposition is from the standpoint of the histologist and morphologist. 30 figures.—*C. P. Stone* (Stanford).

599. **Haldi, J. A., Ward, H. P., & Woo, L. Differential metabolism in brain tissue as indicated by lactic acid determinations.** *Amer. J. Physiol.*, 1927, **83**, 250–253.—The rate of acid metabolism is different in the four portions of the brain: cerebral hemispheres, cerebellum, mid-brain and medulla. The greatest amount appears in the medulla and the least in the cerebral hemispheres.—*M. J. Zigler* (Wellesley).

600. **Kolmer, W. Bemerkungen über die Regio olfactoria der Anthropoiden.** (Notes on the olfactory region of anthropoids.) *Zsch. f. Anat. u. Entwickgesch.*, 1927, **84**, 160–170.—Similarities and differences are noted in the microscopic structure of the olfactory sense organs of anthropoids and man.—*W. C. Trow* (Michigan).

601. **Poljak, S. Über die Nervenendigungen in den vestibularen Sinnesendstellen bei den Säugetieren.** (On the nerve endings in the vestibular sense organ of mammals.) *Zsch. f. Anat. u. Entwickgesch.*, 1927, **84**, 131–144.—Observation of the neurones in the vestibular sense organ discloses different types of nerve endings, coarse, middle-sized, and fine, arranged in more or less systematic fashion in the crista and macula.—*W. C. Trow* (Michigan).

602. **Poljak, S. Über die doppelte Innervation der Macula sacculi und über**

das Cochleo-vestibuläre Bündel bei den Säugetieren. (On the double innervation of the macula acustica of the saccule and the cochleo-vestibular bundle in mammals.) *Zsch. f. Anat. u. Entwickgesch.*, 1927, **84**, 145–152.—A number of preparations of the organs of the inner ear of the rat give further evidence that the branches of the eighth nerve, though lying close beside each other, are actually quite separate, forming the bifurcating vestibular nerve and the cochlear nerve, thus offering still further support to the specificity doctrine.—*W. C. Trow* (Michigan).

603. **Wang, C. C. On the postnatal growth in the area of the optic nerve in albino and in gray Norway rats.** *J. Comp. Neur.*, 1927, **43**, 201–220.—The relation between the cross-section of the optic nerve and brain weight in the albino rat is not significantly different from that of the gray Norway rat. This fact is of interest in view of the general belief that the visual apparatus of the albino rat is somewhat defective as compared with that of the gray rat. Two charts.—*C. P. Stone* (Stanford).

MOTOR PHENOMENA AND ACTION

604. **Allen, E. The menstrual cycle of the monkey, *Macacus rhesus:* observations on normal animals, the effects of removal of the ovaries and the effects of injections of ovaries and placental extracts into the spayed animals.** *Carnegie Instit. Publ., Contrib. to Embryol.*, 1927, **19**, No. 98, 1–44.—(13 plates, 1 figure, bibliography of 89 items.) The effect of double ovariectomy and subsequent injections of ovarian and placental extract as measured by histological and physiological methods were noted on 8 *rhesus* monkeys. Typical menses followed in from 3 to 9 days previous to normal expectancy. Injury to the large follicle of one ovary had similar effects. The post-operative menses were longer than the mode of normal menses. Double ovariectomy was followed by a thinning of the vaginal wall, shrinkage in size of the uterus and involution of the mammary glands. Sixteen series of injections, each series extending over from 9 to 16 days, with dosage varying from 64 to 230 units per series had the following general effects: increase of uterus to normal size, thickening of vaginal wall beyond normal, growth of cervix and of glands of cervical region and growth of the mammary glands. In 7 out of 10 cases, typical but scanty menstrual bleeding persisted from 1 to 3 days after conclusion of a series of injections. In 17 cycles of normal animals no ovulation was observed. This fact together with evidence for a fairly normal cycle to be induced in spayed animals by injections of placental (human) and ovarian (pig) extracts is adduced to favor the view that the corpus luteum is not an essential factor in initiating the menstrual cycle in the normal animal.—*C. J. Warden* (Columbia).

605. **Allen, E., & Doisy, E. A. Ovarian and placental hormones.** *Physiol. Revs.*, 1927, **7**, 600–650.—A review of recent literature and bibliography of 217 titles.—*C. W. Darrow* (Institute for Juvenile Research).

606. **Bartels, M. Ophthalmostatik und Ophthalmokinetik.** (Ophthalmostatics and ophthalmokinetics.) *Arch. f. Ophth.*, 1927, **118**, 270–284.—The so-called neck-eye reflexes from the joints of the spine and the eye movements which appear upon movement of the limbs and pelvis form, among others, the basis for this paper. The neck-eye reflexes seem to be absent in birds, as also after exclusion of sight. The probable path of the reflex is pointed out. Among the influences of light the author distinguishes a general light tonus and a directive effect of the light (phototropism or phototaxis). The latter is found in its purest form in the eyes of *Cladocera*, which, like some plants, are turned toward the light as if by compulsion (positive phototropism). Other crustaceans are negatively phototropic. The automatic response to light is extremely varied in the different

species of animals. There are mammals (rodents) in which no response to light is found. The cerebral development thus plays no rôle in this matter. The vestibular (geotropic) eye response is found in nearly all animals. In many, as is also the case with infants, the vestibular eye movements are entirely or partially compensated for by means of head movements. Among the central influences upon the eye muscles an automatic and a fixating influence must be differentiated. A cerebral tonus in humans is released only from the second frontal convolution. The observations on men injured in the war tend toward the denial of a direct center in the occipital lobes. The observations made on blind persons, whose eyes are usually turned toward the right, allow us perhaps to assume a predominating influence of the left cerebral hemisphere on the muscles of the eyes. The eye movements which can be observed when the eyes are fixed and at rest are important for the criticism of twilight nystagmus and miners' nystagmus. The ability to move the eyes spontaneously is distributed in an extraordinarily irregular manner in the animal scale. The same is true for convergence and movements of fusion. The relations between eye movements and general body movements are very complicated; no single unifying principle can be recognized in the animal scale. The manner of living plays some rôle in these relations, but not an exclusive one. Optic reflexes of position are observed only in animals having spontaneous eye movements. With regard to eye movements animals may be distinguished as phototropic, vestibular, searching, etc. The more an animal acts upon proprioceptive reflexes, the less it can fixate spontaneously. The development of the different reflexes of eye movement cannot be explained by means of the common evolutionary concept of development.—*M. Bartels* (Dortmund).

607. **Bazett, H. C. Physiological responses to heat.** *Physiol. Revs.*, 1927, 7, 531–599.—A review of the literature with bibliography.—*C. W. Darrow* (Institute for Juvenile Research).

608. **Borries, G. V. T. Pulsverlangsamung bei Labyrinthitis und bei Augenkrankheiten.** (Slowing of the pulse in labyrinthitis and ocular disease.) *Monatssch. f. Ohrenhk.*, 1927, **61**, 205–216.—A slowing of the pulse occurs in labyrinthitis which the author regards as due to the same mechanism which gives rise to the oculocardiac reflex. The latter is elicited by pressure on the eyeballs. Stimulation of the trigeminus-innervated areas of the nose produces similar effects. Persons reacting to these stimuli with a slowing of more than five to ten beats per minute are classed, after Dagnini, as vagotonic, and those who show an increase in rate, as sympathicotonic. The author suggests that we have here a mechanism for labyrinthine control of blood pressure.—*C. W. Darrow* (Institute for Juvenile Research).

609. **Cordero, N., & Carlson, A. J. The effects of functional union of the central end of the phrenic nerve with the peripheral end of the motor nerve to the sternohyoid muscle.** *Amer. J. Physiol.*, 1927, **82**, 580–582.—The central end of one root of the phrenic nerve was sutured to the peripheral end of the motor nerve to the sternohyoid muscle. This operation was performed upon five dogs. Three to six months later the sternohyoid muscle was exposed for the purpose of ascertaining whether functional union had taken place. In four of the dogs there was successful functional union; however, the contractions were not strong enough to be visible or palpable through the intact skin. They were also not strong enough to cause any movement in the subcutaneous tissues. It is obvious that functional restoration occurs under these circumstances, but whether normal coördinated movements are also restored is an unsettled question.—*M. J. Zigler* (Wellesley).

610. **Dragstedt, L. R. The physiology of the parathyroid glands.** *Physiol. Revs.*, 1927, **7**, 499–530.—A review of the literature. Bibliography.—*C. W. Darrow* (Institute for Juvenile Research).

611. **Fleischmann, P. Die Abwehrreflexe und ihre Bedeutung.** (The de-

fense reflexes and their significance.) *Arch. f. Psychiat. u. Nervenkr.*, 1927, **80**, 377–434.—(From the psychiatric clinic at Königsberg.) In the literature induced by Babinski's discovery of the well-known reflex of the soles of the feet, the so-called defense reflexes are also treated (van Gehuchten, Babinski, Bekhterev, Marie, Foix and in Germany particularly Böhme). They are elicited by means of disagreeable or harmful stimulations over the soles of the feet, and appear as complex movements, usually in the form of shortening and less frequently in the form of lengthening of the extremity. In certain pathological conditions they are very easily elicited and are also characteristically spontaneous, so that the patients complain of them. Their diagnostic significance consists in that they present an easily elicited and striking symptom, having an importance similar to that of the Babinski and the other reflexes which often only exhibit their particular forms. Moreover, with positive Babinski their course confirms special conclusions and should therefore always be tested. A bibliography of 201 titles is included.—*W. Wirth* (Leipzig).

612. **Ganguli, M. L. "Natural" reaction time of a group of Bengali boys.** *Indian J. Psychol.*, 1926, **1**, 165–170.—The writer believes this to be the first attempt to determine a psychological norm of reaction in Bengal. The data comprise a total of 2,909 reactions given by 50 college students under the usual conditions of "natural" reaction time experiments. The apparatus used was the Vernier chronoscope of the Sanford model, and a flag stimulus (visual) was employed. Excluding practice, delayed and premature reactions, and those obtaining during the "warming-up" period, 60 reaction times were collected. The range was from 155 to 209 σ. The subjects were divided into different classes according to the modal values of their reaction times. The median was found to be 177 σ, with an A. D. of 16 σ; the mode was 180 σ, A. D. 20 σ; the mean was 178 σ, A. D. 20 σ. This is lower than the norm of natural reaction time as given by Titchener (190–200 σ).—*L. A. Averill* (Worcester Normal).

613. **Haldane, J. S. Acclimitisation to high altitudes.** *Physiol. Revs.*, 1927, **7**, 363–384.—A review of the literature. Bibliography.—*C. W. Darrow* (Institute for Juvenile Research).

614. **Hammett, F. S. Interpretative generalizations from the differential development observed in conditions of thyroid and parathyroid deficiency.** *Amer. J. Physiol.*, 1927, **82**, 250–260.—Discussion of the influence of thyroid and parathyroid removal upon differential development of organs and upon metabolism in general during the developmental period.—*M. J. Zigler* (Wellesley).

615. **Haywood, C. The effect of carbon dioxide upon the contraction of striated muscle of the frog.** *Amer. J. Physiol.*, 1927, **82**, 241–249.—"In Ringer's solution saturated with carbon dioxide the contraction of the cutaneous pectoris muscle of the frog is on an average reduced in one minute to 80 per cent of the original value and in five minutes to approximately 25 per cent. In ten or fifteen minutes contractions may be very nearly abolished." The reduction is proportionately less with amounts of carbon dioxide correspondingly less than 100 per cent saturation. These results cannot be duplicated in a medium deprived of oxygen.—*M. J. Zigler* (Wellesley).

616. **Kleitman, N. The influence of starvation on the rate of secretion of saliva elicited by pilocarpine, and its bearing on conditioned salivation.** *Amer. J. Physiol.*, 1927, **82**, 686–692.—Kleitman and Crisler found that the salivary conditioned reflex in dogs deteriorates as a result of starvation, and does not regain its full strength upon realimentation. Morphine was used as the unconditioned, and a set of tactile and visual sensations as the conditioned stimulus. The present investigation of Kleitman aims to determine whether the breakdown of the salivary conditioned reflex is the result of changes in the nerve centers or in the peripheral structures. It appears that morphine does not act on the peripheral organs, consequently it is suggested that the abolition of the morphine

salivary conditioned reflex is the result of a physiological deficiency in the central nervous system.—*M. J. Zigler* (Wellesley).

617. **Kunde, M. M., & Carlson, A. J. Experimental cretinism. I. A rachitic-like disturbance in extreme hypothyroidism.** *Amer. J. Physiol.*, 1927, **82**, 630–638.—Young rabbits of two to three weeks of age were thyroidectomized. One or two rabbits of each litter were not operated upon. These served as controls. They had the same environmental conditions as their litter mates upon which the operation was made. The thyroidectomized rabbits soon developed a condition resembling closely that of rickets in children. There was disturbance of skeletal development, which was not a result of dietary deficiency. There was normal or slightly below normal concentration of the blood calcium.—*M. J. Zigler* (Wellesley).

618. **Lombard, W. P., & Cope, O. M. Sex differences in heart action.** *Amer. J. Physiol.*, 1927, **83**, 37–46.—An investigation of the points of resemblance and of difference in the curves of duration of systole and of heart rate of men and women. In general, the systolic phase is longer and the heart rate faster in women than in men.—*M. J. Zigler* (Wellesley).

619. **Manzer, C. W. An experimental investigation of rest pauses.** *Arch. Psychol.*, 1927, No. 90. Pp. 84.—An historical survey of the work on rest pauses introduces the present study. The purpose of this investigation is to study the phenomena of recovery from the effects of work of various kinds through rest pauses of varying length. Nine subjects, graduate students in psychology, were first trained in the movements to be used. Is the work done after rest pause less than, equal to, or greater than the work done before the rest pauses? Pauses of 5, 10, and 20 minutes were used in muscle-groups of the finger, hand, arm, leg, and body as a whole. The recovery of muscles during rest when work is not of long duration is very rapid. Recovery within a small rest pause of given length is greater in small muscle-groups than it is in the muscles of the body as a whole. The second section of the investigation was concerned with a rest pause of ten minutes in the flexor muscles of the arm with loads of 12, 18, 24 and 30 pounds. The output of any given load is very variable. The relation between load and output may be facilitated or inhibited by the attitude of the worker toward his work, thus complicating the problem. Attitude does not modify the recovery value of a rest pause to any considerable extent when the work done after rest is measured in terms of percent of the first work period. Attitude does, however, seem to modify greatly the *absolute* amount of work. The investigator regards contraction rather than period of work as the real unit of muscular work. "The period of work is an artifact which must be clearly defined in terms of frequency of contraction." In general, frequent rests make for greater efficiency in muscular work than do long, infrequent rests. Twelve topics are appended as suggestions for research.—*E. M. Achilles* (Columbia).

620. **McGlone, B., & Bazett, H. C. The temperature of the air in contact with the skin.** *Amer. J. Physiol.*, 1927, **82**, 452–461.—Description of a method, using thermocouples, by means of which the temperature of the air at the surface of the skin may be determined at .5 mm. steps within the limits of 5 or 6 mm. from the skin.—*M. J. Zigler* (Wellesley).

621. **Meakins, J. Arterial hypertension and hypotension and their clinical significance.** *Physiol. Revs.*, 1927, **7**, 431–497.—A review of the literature with a bibliography of 257 titles.—*C. W. Darrow* (Institute for Juvenile Research).

622. **Meek, W. J. The question of cardiac tonus.** *Physiol. Revs.*, 1927, **7**, 259–287.—A discussion of the meaning of "tonus" in general, with a review of literature on cardiac tonus. Bibliography of 91 titles.—*C. W. Darrow* (Institute for Juvenile Research).

623. **Ohm, J. Zur Augenzitternkunde. 7. Mitteilung. Der optische Drehnachnystagmus.** (On the twitching movements of the eyes. Part 7. After-

nystagmus following optical rotation.) *Alb. Graefes Arch. f. Ophth.*, 1927, **118**, 103–117.—The author has shown (1922) that the nystagmus accompanying a purely optical rotation (rotating drum) may persist after the cessation of rotation. He now reports a more elaborate study of this phenomenon with refined technique. The light illuminating the drum was suddenly extinguished, and eye-movements occurring in darkness were recorded. Of 6 subjects, 4 displayed after-nystagmus; with 3 of these the after-nystagmus was in the same direction as the primary nystagmus, i.e., opposed to the rotation. Theory: the intermittent stimulus due to the light and dark bands on the rotating drum generates pendular vibrations in certain ganglion-cells of the "optical vibration-circuit." As a rule, vibrations of different frequencies and amplitudes are simultaneously aroused. The interference of these produces a series of twitches opposed to the rotation (primary nystagmus). When rotation ceases, the vibrations persist until they are damped out (after-nystagmus). The damping is much weaker in the dark than in the light. The relation of after-nystagmus to illusions of motion is discussed.—*D. McL. Purdy* (California).

624. **Piéron, H. L'influence le l'intensité sur le temps de réaction à la cessation d'un stimulus lumineux.** (The influence of intensity upon the reaction time to cessation of a light stimulus.) *C. r. Soc. biol.*, 1927, **97**, 1147–1149.—The author presents the results of a series of investigations upon the reaction to cessation of a luminous stimulus, as related to a study of variations in sensory persistence due to a change of the intensity of the stimulus. This reaction to cessation is difficult to obtain, since there is a diminution of sensory intensity which precedes complete disappearance, and which therefore tends to mask the reaction. In the same way as with the reaction to the appearance of a light stimulus, the latent periods diminish as the intensity is increased, and follow a similar hyperbolic law; but at the lower threshold the times are longer for appearance than for cessation, while at the upper limit, they are, on the contrary, shorter. It is difficult to determine the exact rôle of variations in speed of disappearance in the diminution of the reaction time to the cessation of a light stimulus of increasing intensity, because of the varying magnitude of the units of sensation under such conditions.—*Math. H. Piéron* (Sorbonne).

625. **Stern, H. Stimmlippenfunktionsfrage: Resonanzfrage, deren gegenseitige Beziehungen und Bedeutung in wissenschaftliche und praktischer Hinsicht.** (The function of the vocal cords: the question of their resonance and apposition, and its scientific and practical significance.) *Monatssch. f. Ohrenhk.*, 1927, **61**, 533–556.—The writer discusses the relative importance of resonance in the voice cavities compared with the quality of the vocal cord contribution to voice production.—*C. W. Darrow* (Institute for Juvenile Research).

626. **Sundstroem, E. S. The physiological effects of tropical climate.** *Physiol. Revs.*, 1927, **7**, 320–362.—A review of the literature with a bibliography of 194 titles.—*C. W. Darrow* (Institute for Juvenile Research).

627. **Vincent, S. Current views on "internal secretions."** *Physiol. Revs.*, 1927, **7**, 288–319.—A review of recent literature. Bibliography of 99 titles.—*C. W. Darrow* (Institute for Juvenile Research).

[See also abstracts 591, 638, 639, 662, 687, 796.]

PLANT AND ANIMAL BEHAVIOR

628. **Allee, W. C. Studies in animal aggregations: some physiological effects of aggregation on the brittle starfish, *Ophioderma brevispina*.** *J. Exper. Zoöl.*, 1927, **2**, 475–495.—An experimental study of the fact that animals collect in nature and in the laboratory in such a manner as to occupy only a fraction of

the available space. The question whether this is due to a social instinct, group tropism, tropistic reaction to environmental stimuli, or some other cause is considered. It is shown that under unfavorable conditions the members of a group have a greater average survival time than do their isolated fellows. Under certain other conditions, however, "crowding" may have a deleterious effect. Literature is cited.—*L. Carmichael* (Brown).

629. **Bingham, H. C. Parental play of chimpanzees.** *J. Mammalogy*, 1927, **8**, 77–89.—This paper describes the play activities of a family of chimpanzees in the Abreu colony at Havana, consisting of a male of about 25 years, a female of about 12 years, and a female infant which was observed between the ages of seventeen and twenty months. The following activities of mother and infant are described: thorough exploration and manipulation of the mother's body by the infant, the mother submitting to this and to much picking and pulling; hand and foot clasping; grasping and tumbling; hugging and fondling; tickling of infant by mother; rocking and carrying; chasing and evasion; boxing-like play-attacks on the mother by the infant. The father played much less with the infant than did the mother, though he sometimes swung her as he hung from a beam and she from his feet. Sometimes the whole family paraded in single file around their quarters, occasionally with the youngster riding the mother's back. In general, the mother watched the infant closely, checked her attempts to play with humans, and hurried her out of the way when the father had a tantrum. (2 plates.)—*D. K. Adams* (Yale).

630. **Cholodny, N. Wuchshormone und Tropismen bei den Pflanzen.** (Growth-hormones and tropisms among plants.) *Biol. Zentbl.*, 1927, **47**, 604–626.—A review of the literature of the last twenty years, and a sketch of a theory to explain plant tropisms as the functioning of growth and other hormones in the plants. Bibliography.—*J. F. Brown* (Yale).

631. **de Haan, J. A. B. Einige Bemerkungen über die scheuernde Ziege Prof. Lakowitz'.** (Some remarks on the scratching goat of Prof. Lakowitz.) *Biol. Zentbl.*, 1927, **47**, 627–629.—From the standpoint of Lloyd Morgan and the modern animal psychology, the author criticizes Lakowitz for his use of the so-called anecdotal method in a recent paper in *Biol. Zentbl.*—*J. F. Brown* (Yale).

632. **Elton, C. Animal ecology.** New York: Macmillan, 1927. Pp. xx + 207. $4.00.—(Introduction by Julian S. Huxley.) The author stresses methods and approaches rather than data, the latter being, as he points out, very scarce in any useful form. He develops especially the concept of animal communities in their relations to geographic and biotic controls and to time rhythms; that of food-chains and food-cycles, with the related ideas of size of food and the number pyramid (e.g., starting from the rabbit, as the size of successive enemies increases to, say, that of the lion, the number of individuals decreases; considering the parasite enemies, the reverse holds); that of niches, or specialized functions which may be exercised by different species in different environments; and that of variation in numbers, epidemics, dispersal, etc., instancing here such phenomena as the great historical rat and locust plagues. Attention is called to the importance of the ecological attack on evolution problems, and a final chapter sums up the ecologist's methods. There is a bibliography of 152 titles.—*R. R. Willoughby* (Clark).

633. **Fischel, W. Beiträge zur Sociologie des Haushuhns.** (Contributions to the sociology of the domestic fowl.) *Biol. Zentbl.*, 1927, **47**, 678–695.—Accidental observation of the group behavior of 500 chickens, daily freed into an orchard. Among the facts observed are the following: (1) the chickens seek others in all their activities; (2) the sight of a chicken eating acts as a stimulus for others to do so; (3) the chickens show a tendency to "run races" in which the leader is followed, but this leader often changes; (4) despots exist, but are not always leaders. There is a bibliography appended.—*J. F. Brown* (Yale).

634. **Hitchcock, F. A. The total energy requirement of the albino rat for growth and activity.** *Amer. J. Physiol.*, 1927, **83**, 28–36.—A study of the relation of food consumption to the rate of growth and total bodily activity.—*M. J. Zigler* (Wellesley).

635. **Koppanyi, T., & Kleitman, N. Body righting and related phenomena in the domestic duck (*Anas boscas*).** *Amer. J. Physiol.*, 1927, **82**, 672–685.—Description of various static and stato-kinetic reflexes of the duck when subjected to various postural changes.—*M. J. Zigler* (Wellesley).

636. **Mulinos, M. G. The effect of food upon the empty stomach and its relation to hunger.** *Amer. J. Physiol.*, 1927, **83**, 115–124.—After dogs had been starved twenty-four hours, they were fed fifty grams of lean meat. A rubber balloon inserted into the stomach with manometer attachment indicated changes in the gastric musculature. There was increase in activity and in tone of the stomach soon after feeding. It is concluded that this activity belongs to hunger rather than to the digestive mechanism.—*M. J. Zigler* (Wellesley).

637. **Slonaker, J. R. The effect of different amounts of sexual indulgence in the albino rat on food consumption.** *Amer. J. Physiol.*, 1927, **83**, 302–308.—Sexual indulgence, gestation and lactation are correlated with increased food consumption in the rat.—*M. J. Zigler* (Wellesley).

638. **Slonaker, J. R. The effect on growth of different amounts of sexual indulgence in the albino rat.** *Amer. J. Physiol.*, 1927, **82**, 318–327.—The experiment allowed five degrees of sexual indulgence to different groups of rats. The results in general show that an increase in weight in females is associated with sexual indulgence, that females show greater differences in weight than males, that rats having sexual exercise tend to grow more rapidly in early life than abstainers, and that bearing of young at an early age tends to inhibit body growth in later life.—*M. J. Zigler* (Wellesley).

639. **Slonaker, J. R. The effect on spontaneous activity of different amounts of sexual indulgence in the albino rat.** *Amer. J. Physiol.*, 1927, **82**, 376–380.—The voluntary activity of rats, allowed five degrees of sexual indulgence, was measured by the revolving cage method. The total average run was in inverse order to the number of litters born. The mere bearing of young had less effect in reducing voluntary activity than bearing the same number of litters and nursing them.—*M. J. Zigler* (Wellesley).

640. **Stone, C. P. The retention of copulatory ability in male rats following castration.** *J. Comp. Psychol.*, 1927, **7**, 369–387.—Castrated at the age of 90 days, 45 male rats can still copulate after the operation. Some ceased to copulate during the first week after castration, while others copulated as late as 8 months after. 33% ceased at the end of 1 month after castration; 45% after two months; 57% after the third month; 74% after the fourth; 79% after the fifth; and 91% after the sixth month. No significant difference was found between pre-castration indulgents and pre-castration celibates. Mere exercise of the apparatus of copulation, after castration, will not insure sexual aggressiveness and the persistence of the ability, thus differing from the usual sort of habit; nor will such exercise prevent the usual post-castration atrophy. Four references, eight figures, and two tables.—*H. R. Crosland* (Oregon).

641. **van de Sande-Bakhuysen, H. L., & Alsberg, C. L. The growth curve in annual plants.** *Physiol. Revs.*, 1927, **7**, 151–187.—A review of recent literature giving an analysis of plant growth tissue by tissue. Formulæ are reported with suggestions for application of the method to animal study. Bibliography of 86 titles.—*C. W. Darrow* (Institute for Juvenile Research).

642. **Warner, L. H., & Warden, C. J. The development of a standard animal maze.** *Arch. Psychol.*, 1927, No. 93. Pp. 35.—The authors have analyzed the many mazes which have been described in the literature of the past half century. They list 138 mazes in a table which summarizes their analysis. They have at-

tempted to design and construct a maze along scientific lines which they hope will win the approval of animal investigators. It is now being used in the animal laboratories of New York University and Columbia University, where the authors teach. It is hoped that it will be more generally used, so that results of various laboratories can be collated and compared. The maze is an apparatus without puzzle devices, so constructed as to require for its solution the selection of the shortest route (either spatially or temporally) to a goal which remains constant in position. This maze is made up of standard units which are interchangeable and can be arranged in many patterns by shifting. It can be made more complicated by adding units, or it may be made simpler. The units are constructed of 18 gauge galvanized Armco sheet metal, covered with aluminum paint in order to insure uniformity of appearance. The units have walls and a roof but no floor. A platform 7 x 8 feet covered with battleship linoleum has proved satisfactory. Another platform, of plate glass, is being tested. If it proves satisfactory it will offer many advantages. The maze has been built and is for sale by Geo. H. Wahmann Mfg. Co., Baltimore, Md. Designs were furnished by the authors, who receive no financial return, as they are anxious for the maze to be furnished at the least cost. The rat maze complete (15 pathway units, 15 culs-de-sac, 1 entrance compartment, 1 goal compartment) is priced at $225 f.o.b. Baltimore; additional units are available, pathway units $6.75, culs-de-sac $8.75, entrance box $4, goal box $6.75. A bibliography of 138 items used in compiling the table mentioned above is appended. Fourteen plates are included.—*E. M. Achilles* (Columbia).

[See also abstracts 575, 594, 595, 596, 598, 601, 603, 604.]

EVOLUTION AND HEREDITY

643. **Bolin, J. S., & Holmes, S. J. Marriage selection and scholarship.** *J. Hered.*, 1927, **18**, 253–255.—Data upon the marriage of 2074 alumnæ of the University of California who graduated between 1878 and 1910, compared with data upon their scholarship averages while at college, showed that 55.93% of all the alumnæ had married, that the scholarship average of those who had married was virtually the same as that of the ones who had not married, and that no significant correlations existed between scholarship and interval between graduation and marriage when those who had married were studied class by class or *in toto*. Of 75 women who graduated with Phi Beta Kappa between 1880 and 1910 inclusive, 41 had married and 34 had not. When the Phi Beta Kappa group was extended to include those graduating up through 1915, it was found that 68 had married and 66 had not.—*B. S. Burks* (Stanford).

644. **Crossman, A. M. Inheritance of abnormalities in teeth.** *J. Hered.*, 1927, **18**, 368–370.—Six studies on hereditary abnormalities of teeth appearing between 1870 and 1921 are briefly summarized. The reader's attention is called to the fact that little exploration has been made to date in this field.—*B. S. Burks* (Stanford).

645. **Dunlap, K. Evolution, or what have you?** *Amer. Mercury*, 1927, **12**, 458–463.—Since evolution is a scientific working hypothesis and the accounts of creation are religious dogmas, no basis for conflict or harmonization exists. "There is nothing in the physical universe which furnishes a basis for the existence of a Planner. . . . If we believe in Him, it is on other grounds. . . . The differences between the Fundamentalists and the conventional evolutionists are after all minor matters and due principally to intellectual confusion, emotional attitudes, and arbitrary beliefs." Finally, the author points out the philosophical possibility, and the undemonstrability, of radical evolutionary processes in which not only things but laws change; if this possibility seems to upset a scien-

tist, he is making a religion of his science. "When we rigorously separate our science from our metaphysics, we have no cause for alarm over philosophical possibilities."—*W. Dennis* (Clark).

646. **East, E. M. Heredity and human affairs.** New York: Scribner's, 1927. Pp. ix + 325. $3.50.—The author of this volume points out two "outstanding beacons" which "will probably do more toward steering society into safe channels than any others": psychology and eugenics. He here presents his point of view on the latter and indicates some phases of its social significance. Genetics has in the past twenty-five years emerged from its status as "master riddle of science" to a place where its laws are formulated as definitely and precisely as those of chemistry and physics. These principles are presented in the early chapters of the book. Evidence is presented to show that the general rules of heredity are "the same for cabbages and kings." Working side by side with heredity is its collaborator, environment: "heredity is the credit in Nature's bank, deposited for an individual at conception"; what he does with it depends upon circumstances. In so far as there is a general thesis it is this: "society is a huge colonial aggregate, composed of units having diverse values; these units wear out and must be replaced; consequently the kind of material used in the new parts makes a great difference in the smoothness with which the organism functions." Consanguineous marriage is in general undesirable; there are too many objectionable recessive traits common in human beings. Race and heredity are dealt with in two chapters; in the first the author points out the fact that it is the individual that counts, not the race; in the second he treats of specific race problems. Heredity and environment combine to make men great, therefore geniuses should be picked early and "we should see that no millstones are around their necks." As to the "lower levels of humanity," the best that can be done is to make the best possible adjustment of environment and training. On the differential birth rate question, East is not optimistic. A chapter is devoted to a rather general discussion of immigration. The genetic aspects of some everyday problems, e.g., feminism, old age pensions, mothers' pensions, etc., are treated in the concluding chapter.—*L. M. Harden* (Clark).

647. **Gregory, W. K., & Hellman, M. The dentition of *Dryopithecus* and the origin of man.** *Anthrop. Papers Amer. Mus. Nat. Hist.*, 1926, **28**, Part I. Pp. 123. $1.50.—An intensive study of the dentition of the Hominidae, with special emphasis on the recent Siwalik discoveries. 25 plates, 32 text figures, 52 tables of measurements, and a 6-page bibliography.—*R. R. Willoughby* (Clark).

648. **Hance, R. T. Altering a matured genetic character.** *J. Hered.*, 1927, **18**, 377–380.—It was found that a few weeks after mice with pigmented hair had been exposed to certain amounts of X-rays their colored hair fell out and was replaced with white. The process took about four or five weeks, and persisted up to the date of writing (for 12 months) without change. The author consequently considers the change to be a permanent reversal of an original genetic character. A group of animals given long exposures over small areas of their bodies became sexually sterile. The fertility of other animals given lighter exposures will be investigated. If these animals prove fertile, it will be determined whether or not their acquired albinism is transmissible to offspring. The numbers of animals used in the various groups described are not reported. A possible cause suggested for the vanishing of pigmentation is that the mechanism producing the enzyme that reacts with chromogen to produce color is destroyed.—*B. S. Burks* (Stanford).

649. **Hanson, F. B. Is insanity ever hereditary?** *J. Hered.*, 1927, **18**, 285–286.—A chart of forty individuals comprising five generations of a family tree shows 9 (22.5%) who were insane, and 3 who were peculiar and highly nervous. Of the 9 insane individuals, 8 were women, and the 3 peculiar individuals were

all women. The offspring in the fifth generation were not yet adult. The author suggests that the study "may indicate a strong predisposition to hereditary insanity; on the other hand it may be merely an unfortunate concatenation of focal infections ending in functional psychoses in this family."—*B. S. Burks* (Stanford).

650. **Hanson, F. B., & Heys, F. Alcohol and eye defects.** *J. Hered.*, 1927, **18**, 345–350.—Starting with ten albino rats, litter mates from an inbred stock, five were used for an inbred line of control rats and five for an inbred experimental line. The rats of the experimental line for ten generations were exposed to alcoholic fumes until complete narcotization took place, each day from the age of 20 days up to adulthood. Although the effect of the alcoholic fumes was to injure the eyes of the exposed animals severely, often causing blindness or opaqueness of the lenses, every one of the 1688 young born to these alcoholic parents was born with normal eyes, with the exception of one male whose eye defect was proved not to be hereditary. In the control line two defective-eyed rats were produced. No eye defects were found in *either* group during five generations which followed the cessation of the alcoholic treatments. Literature from other investigations of the transmissibility of acquired eye-defects is briefly reviewed.—*B. S. Burks* (Stanford).

651. **Jenkins, R. L. Twin and triplet birth ratios.** *J. Hered.*, 1927, **18**, 387–394.—Using vital statistics from various countries, the author refutes the law of multiple births in the form proposed by Hellin in 1895, and develops a modification which better fits the observed frequencies of multiple births. Hellin's rule states that if twin births occur in a proportion P, triple births occur in a proportion P^2, quadruple births in a proportion P^3, etc. Thus $T = P^2N$ where T is the total number of triplet births, P is the proportion of twin births for all ages of mothers, and N is the total number of births. But due to the fact that the ratio of multiple births to total births increases with the age of mothers till nearly age forty, while total births decrease with age of mothers after the early twenties, more accurate predictions of the frequencies of triplet births, quadruplet births, etc., can be found by summing powers of the proportions of twin pregnancies times total number of pregnancies for mothers of different ages separately. Thus $T = \Sigma P^2N$ where P and N take appropriate values successively for different ages of mothers. Other comments or conclusions are: (1) that any deviation from the modified rule as given above may be due to a differential mortality of twins and triplets *in utero*; (2) the fact that the prediction of the total number of triplets is reasonably accurate, while the prediction of the various types (monozygotic, dizygotic, trizygotic) does not agree with the observed data, strongly suggests that the development of monozygotic and dizygotic twins are not separate and distinct phenomena, but in some manner are controlled by the same factors and are perhaps to be considered as two phases of the same phenomenon.—*B. S. Burks* (Stanford).

652. **Jennings, H. L. Health progress and race progress.** *J. Hered.*, 1927, **18**, 271–276.—In an address before the 23d Annual Meeting of the National Tuberculosis Association, Jennings points out that modern medical and chemical ingenuity have made it possible for many harmful or degenerate genes to survive in human beings which in the days of primitive man would have been cancelled through natural selection of desirable types. To defend the race against the remedial scientific discoveries which are likely to "overshoot themselves and fall on the other side," the author believes our aim should be not to check the advance of science, letting cretinism, diabetes, and other human ills destroy the individuals who carry them, but to prevent the carriers of injurious genes from propagating, at the same time giving them every aid that medicine can offer to help them lead normal lives.—*B. S. Burks* (Stanford).

653. **Lush, J. L. "Percentage of blood" and Mendelism.** *J. Hered.*, 1927, **18**, 351–367.—Quoting the author's summary: "The results are presented of an inquiry into the accuracy of 'percentage-of-blood' descriptions of individual animals in the various generations which are produced in the process of grading-up one breed or common stock by the use of sires belonging to another pure breed. The accuracy of such descriptions is found to depend upon the number of pairs of factors which differ in the cross. If only one factor pair were involved, they would have no meaning at all as descriptions of individual animals. If as many as nineteen independent factors are involved and if the whole animal is considered as a unit, percentage-of-blood descriptions are accurate enough to justify their use for three-quarter-blood and seven-eighths-blood individuals but are not accurate enough to be of much use in describing individuals differing only one-sixteenth in blood. If twice that number of independent factors is involved the percentage-of-blood description is accurate enough for use in describing the fifteen-sixteenth-blood generation but is not accurate enough to be of much use in describing individuals which differ by one thirty-second in blood. The existence of linkage and a definite number of chromosome pairs places a limit on the smallness of the fraction of blood which one is justified in using to describe an individual, even though the number of factors involved in the cross may be almost infinite. The use of the percentage-of-common-blood methods of measuring relationship between two individuals does not lead to very serious errors when one of the two individuals is a direct ancestor of the other, but does give rise to serious errors when applied to individuals which are collateral relatives of each other. Measuring an animal's degree of inbreeding by the percentage of blood common to its sire and dam is not accurate enough to be of much practical use."—*B. S. Burks* (Stanford).

654. **Straus, W. L., Jr. Growth of the human foot and its evolutionary significance.** *Carnegie Instit. Publ., Contrib. to Embryol.*, 1927, **19**, 101, 93–134.—(1 plate, 6 figures, bibliography of 85 items.) A study of the phylogenetic relationship between man and the other primates as indicated by conferentia and differentia in foot structure in these types—a part of the animal that has been more or less neglected by other investigators, in favor of the brain, hand, teeth, etc. The material consisted of 64 human individuals and 49 specimens of anthropoid apes and monkeys, together with a limited number of primate foot skeletons. Of the human material 50 specimens were fetal, 4 were newborn, 2 were juvenile and 8 adult. Eleven gorillas, 14 chimpanzees, 7 orang-utans, 10 gibbons and 7 howling monkeys representing comparable stages of development were examined as to foot formation. Numerous tables give averages and ranges for each stage of development of the different classes of primates covering the various foot measurements in detail. Straus finds the feet of man and the other primates much more alike in the early stages of development. His data in so far as they go "point strongly to a basal type of foot from which the variously specialized feet of all the primates (Lemuroidea and Tarsioidea are not included in his investigation) developed phylogenetically as well as ontogenetically." The foot of fetal man is not only vastly different from that of the adult human, but "is one whose structure makes it unfitted for an upright terrestrial existence." It is in many respects "not unlike that possessed by the adult gorilla, although in some points even more primitive than that of the largest of anthropoid apes." While most of the ancestral characters are lost before birth, many of them persist in man in a vestigial condition.—*C. J. Warden* (Columbia).

655. **Usher, C. H. Two pedigrees of hereditary optic atrophy.** *Brit. J. Ophth.*, 1927, **11**, 417–437.—Two pedigrees are charted. In the first, five generations are presented in which there appear eight cases of the disease (seven males and one female), occurring in three successive generations. Three affected males

appear in one sibship, which, together with a first cousin, constitute the incidence of the disease in one generation. The four remaining cases appear in the two preceding generations. In the second pedigree there are sixteen individuals with double optic atrophy. Six generations are represented, of which two (III, IV) contain all the affected cases. Of the diseased individuals fourteen are males and two females. The ten cases in generation III are the offspring of five unaffected sisters, and the six cases in generation IV are the sons of unaffected females who occur in two sibships containing affected males. A bibliography containing 16 titles is included.—*F. Fearing* (Northwestern).

656. **Willoughby, R. R., & Goodrie, M. Neglected factors in the differential birth rate problem.** *Ped. Sem.*, 1927, **34**, 373–393.—The race has been said to be going downhill in average intelligence on account of a higher birth rate among the classes of lower intelligence. This is based on the assumption that a negative correlation between fecundity and intelligence inevitably implies a declining average of intelligence. In the present study artificial populations, in which the individuals were of known genetic constitution, were "bred," and the statistical constants studied, on the assumption of Mendelian inheritance. Five theoretical factor-pairs determining intelligence upward or downward (in the three phases of dominant, heterozygote, and recessive) were combined in various additive relations for five successive generations. It was found that the above mentioned assumption is justified when the coefficients of correlation between husband and wife are low (.37) but is not justifiable when it is as high as .58.—*J. F. Dashiell* (North Carolina).

657. **Woods, F. A. Is the human mind still evolving?** *J. Hered.*, 1927, **18**, 305–308.—Figures compiled from Harvard anniversary records of classes graduated twenty-five years ago or more show a correlation between the number of children in the families of the graduates and success as indicated by inclusion in *Who's Who*. Combining records from men of the classes of 1890, 1892, 1894 and 1898, the percentages attaining *Who's Who* ran 9.7 for bachelors, 16.4 for married but childless, then 16.9, 16.8, 18.9 and 18.1 for one, two, three, and four or more children respectively. The author attempts to reconcile these favorable eugenic facts with the usual differential birth rate weighted toward the lower social classes by suggesting that since the different classes do not often intermarry, each class may be studied as if it were a distinct variety. Thus *within* each class the better parents may be expected to rear the greater number of offspring.—*B. S. Burks* (Stanford).

SPECIAL MENTAL CONDITIONS

658. **Allendy, R. Eléments affectifs en rapport avec la dentition.** (The relation of emotional elements to dentition.) *Rev. fr. de psychanal.*, 1927, **1**, 82–86.—The phenomena of dentition show important relationships with the evolution of the instincts, particularly the transformation of the digestive libido into sexual libido and the origin of sadism. From this standpoint considerable importance is attached to the fantasy of loss of teeth, as shown in the symbolism of dreams, language, folk-lore and the association of ideas. This symbolism is linked up in the male with ideas of punishment and castration, and in the female with parturition fantasies and sexual assault. This tooth symbolism is so important that it constitutes what may be termed a "tooth complex." (For an earlier contribution to the same subject see a paper by Coriat, *Zentbl. f. Psychoanal. u. Psychotherap.*, 1913, **3**, 440–444; also Freud, *Traumdeutung*, 1922, p. 264.)—*I. H. Coriat* (Boston).

659. **Bonjour, J. La part du psychisme dans l'accouchement, cause, fré-**

quence nocturne et narcose subite. (Psychic factors in parturition; its cause, frequency of nocturnal occurrence, and narcosis-like components.) *Presse méd.*, 1927, **35**, 603–604.—The cerebral mechanism plays a part in the act of parturition of an importance hitherto unsuspected, though its action may be understood. The author cites several cases in which suggestion has induced uterine contractions. He asserts that it is possible to bring about, in no more than 2 or 3 treatments, abortion or premature delivery. Delivery has been effected at a predetermined date, by means of the suggestion that the normal term has been completed. Such suggestions act upon the medullary centers; the suggested idea of contractions is carried out in deep hypnosis with the certainty that would attach to a sensory-motor reflex. All the visceral functions are likewise dependent upon psychic mechanisms. It is possible to accelerate or retard menstruation by as much as 8 days in individuals normally regular. The depth of the hypnotic sleep is increased with the duration of gestation; the more closely the woman approaches her full term, the greater is her suggestibility and the more easily she may be put to sleep. The considerable frequency of noeturnal deliveries is not due to the fact of night itself, but to the slumber state, which intensifies the cerebro-spinal reflexes.—*Math. H. Piéron* (Sorbonne).

660. **Bozzano, E. Des manifestations supranormales chez les peuples sauvages.** (Supernormal phenomena among savage peoples.) Paris: J. Meyer, 1927. Pp. 166. 9 frs.—All men of science, says the author, are in agreement in recognizing that all the peoples of the earth share in the belief of the survival of the spirit after the death of the physical body. After citing numerous examples, the author states that the phenomena of mediumship or metapsychics have been recognized at all times and among all peoples, whether civilized, barbarous, or savage, and in the same manner. This has led him to the opinion that the origin of the universal belief in the existence and survival of the soul is the result of a no less universal observation of supernormal phenomena, and not the result of a great desire or of an illusion. No bibliography.—*Math. H. Piéron* (Sorbonne).

661. **Conklin, E. S., Byrom, M. E., & Knips, A. Some mental effects of menstruation.** *Ped. Sem.*, 1927, **34**, 357–367.—Attitudinal changes experienced at the menstrual period were studied by the questionnaire method on 1568 women. Results as to comfort during the period were: no discomfort in 20%, slight in 45%, moderate pain in 24%, intense in 11%. Changes of attitude reported as occurring during the period were decidedly introvertive, especially in connection with discomfort and pain.—*J. F. Dashiell* (North Carolina).

662. **Daniel, J. F. The action of alcohol on the body and on its output of work.** *Scient. Mo.*, 1927, **25**, 461–467.—A 2% concentration of alcohol is required to injure permanently a free-swimming unicellular organism, and ¼% is required to injure the heart muscle when applied directly; but at much as ⅛% in the blood stream may seriously injure the whole body. This is especially through its effects upon nervous centers, in the disorganizing of delicate motor coördinations: manifested in poorer drawings, in unsteady locomotion, in deranged vasomotor functioning; and in the release of speech from inhibitions while lowering its qualitative efficiency. The findings of Dodge and Benedict, Vernon, Miles, and McDougall and Smith, on reflexes and on acts of skill, are summarized, showing that alcohol must be regarded as physiologically of no benefit.—*J. F. Dashiell* (North Carolina).

663. **Deutsch, F. De l'influence du psychisme sur la vie organique.** (The influence of mental states upon the body.) *Rev. fr. de psychanal.*, 1927, **1**, 105–119.—Psychoanalysis has produced a revolution in psychological thought, particularly in the field of certain medico-biological conceptions, and has thus brought about a revision of our ideas concerning the relationship between mental and physical. Psychoanalysis has made it possible to understand the reciprocal

action of psychic and somatic phenomena during the course of different stages of physical development. For this new tendency, the assimilation of psychological material by medicine, the author proposes the terms "bioanalysis" and "psychobiology." This tendency has two aspects; the experimental, by means of studying the physical changes produced by certain mental states, and the clinical, through observation of mental states upon the healthy and diseased body so as to determine in what precise manner the psychic affects the organic and *vice versa*. It thus becomes a science of the phylogenetic and ontogenetic developmental psychology of the human race. The paper contains a reference to Pavlov's work and a discussion of the author's personal experiences and opinions, emphasizing the discoveries of psychoanalysis.—*I. H. Coriat* (Boston).

664. **Falin, L. Ein Fall von Eunuchoidismus beim Menschen.** (A case of human eunuchoidism.) *Anat. Anz.*, 1927, **64**, 88–101.—Short case history and thorough autopsy of a psychopathic case. The case, with much other recent literature reviewed with it, is claimed to invalidate Steinach's theory of the function of interstitial tissue for secondary sex characteristics, etc.—*J. F. Brown* (Yale).

665. **Farrow, E. P. On the psychological importance of blows and taps in early infancy.** *Psychoanal. Rev.*, 1927, **14**, 445–457.—"In over 1,000 hours of analytical research work and the production of more than 2,500,000 words of free association," the author obtained memories of two sets of blows and taps received at six and eleven months of age, after they had been repressed thirty-three years. The latter, blows after reaching for a woman's breast, "entirely put a finish to any further development of the Oedipus complex." The former, a light tap from the father, destroyed the primitive feeling of omnipotence. "This particular phenomenon was so marked in the writer's case that he can only think that it must be of universal application." He suggests that the lasting effects of blows and taps in early infancy include a great amount of repression, the fundamental origin of the "Freudian censor," the destruction of omnipotence-feeling (thus making the castration complex possible), "feeling of guilt," and neuroticism. In answer to a criticism as to practical importance, "it may be mentioned . . . that we are here not primarily concerned at all with the practical importance of anything, but solely with scientific research."—*W. Dennis* (Clark).

666. **Forel, O. L. Über Suggestion.** (On suggestion.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108**, 771–785.—Well-known facts are utilized for the most general possible characterization of suggestion and its psychotherapeutic significance. Every partial view of the psychic trauma is avoided, and there is a definite counsel to repair the pernicious suggestion by a wholesome one. An excessively sharp distinction between main classes of mental processes is rejected and the "affective reaction" is considered as the basic form of the experiencing of the environment. It contains in the "zoological Esperanto" of the *Einfühlung*, called echothymia by the author, the basic forms of all suggestibility and their intelligent utilization by the person giving the suggestion.—*W. Wirth* (Leipzig).

667. **Freud, S. The ego and the id.** (Trans. by J. Riviere.) London: Hogarth Press, 1927. (International Psychoanalytical Library, No. 12.) Pp. 88.—The first English translation of the author's now classical exposition of his hypothesis of mental structure. Starting from the concept of the ego as "a coherent organization of mental processes," it becomes evident that the older idea of neurotic phenomena as originating from a conflict between the conscious and unconscious is no longer adequate; for factors are in evidence which point to repression within the ego itself. The id is therefore postulated as the underlying and driving system, of which the ego is the portion made conscious and modified by contact with the external world; early identifications with the parent-figures result in the further modification of part of the ego as the super-ego or ego-ideal,

which is the heir of the Oedipus complex and functions normally as the conscience. Abnormally, it operates unconsciously as the guilt-feelings which resist treatment, the sense of worthlessness of the hyper-religious and the melancholic, and the unconvincing feeling of having committed some crime of the obsessional neurotic. The relationships of these three systems to each other and to the various other mental structures, particularly the life- and death-instincts postulated in *Beyond the Pleasure Principle*, are discussed in the final chapter; the relationships of the ego especially interest the author, as it is this system which effects the adjustment of the organism to its external environment and with the vicissitudes of which therapeutic analysis is largely concerned.—*R. R. Willoughby* (Clark).

668. **Freud, S. Le Moïse de Michelange.** (The Moses of Michelangelo.) *Rev. fr. de psychanal.*, 1927, **1**, 120–148.—This is a translation into French, by Mme. Edouard Marty, of Freud's psychoanalytic interpretation of the famous statue of Moses by Michelangelo, together with a short appendix added by Freud in 1927. The original paper was published anonymously in *Imago*, 1914, **3**. A complete English translation can be found in Freud's *Collected Papers.*—*I. H. Coriat* (Boston).

669. **Freud, S. Essais de psychanalyse. (1) Au delà du principe du plaiser. (2) Psychologie collective et analyse du moi. (3) Le moi et le soi. (4) Considérations actuelles sur la guerre et sur la mort. (5) Contribution a l'histoire du mouvement psychanalytique.** (Essays on psychoanalysis. (1) Beyond the pleasure principle. (2) Collective psychology and the analysis of the ego. (3) The ego and the id. (4) Present considerations of war and death. (5) Contribution to the history of the psychoanalytic movement.) (Trans. from the German by S. Jankelewitch.) Paris: Payot, 1927. 20 fr.—This volume contains some of the most characteristic essays of the Viennese psychiatrist. The hypothesis formulated by the author deals with the psychic existence of unconscious ideas. Concerning himself with individual psychology, as in the essays entitled *Beyond the Pleasure Principle* and *The Ego and the Id*, or with collective psychology, as in the essay bearing the title *Collective Psychology and the Analysis of the Ego*, the author endeavors to reduce psychic life to its more primitive elements, to the place where the psychical is near the biological, when the first rudiments of that which we commonly call the mind began to be evolved from the organic structure and to be superimposed thereupon. Thus he has made us descend to unsuspected depths where are involved a whole world of instincts, of tendencies and inclinations to which our conscious being is submitting without respite, without questioning, influences concordant or contradictory, desirable or unavowable. The events of the last war have furnished the author occasion to reflect on the problem of death, and the essay entitled *Present Considerations of War and Death* summarizes his ideas on the subject and indicates, since there is an unconscious factor in our attitude toward death, how little this attitude differs, in its essentials, from that of primitive man and to what degree it lends itself to psychoanalytic explanation. In the last essay, entitled *A Contribution to the History of the Psychoanalytic Movement*, we are made acquainted with the origin, the development and the spread of the doctrine.—*Math. H. Piéron* (Sorbonne).

670. **Goitein, P. L. "The lady from the sea."** *Psychoanal. Rev.*, 1927, **14**, 375–419.—In Ibsen's drama, Ellida's sexual frigidity and home-sickness are attributable to a strong degree of family fixation. Fate symbolizes the unconscious. Ellida's stranger-phantasy is a son-fixation, but, faced with its object, her desire is weak; the Electra complex wins, and she finds her father-ideal in her husband. Ibsen's symbolism is psychoanalytical and his dammed-up emotions are worked off in literary labors. The personal determinants of the drama are analyzed: "Ellida is the poet's disappointed love-life."—*W. Dennis* (Clark).

671. **Hesnard, A. L'individu et le sexe. Psychologie du narcissisme.** (The individual and sex. The psychology of narcissism.) Paris: Delamain et Bouteilleau, 1927. Pp. 227. 12 frs.—The author terms sexual the progressive instinctive process which, in the progressive enlargement of the sentient and oscillating ego, inclines the individual first toward the beings of his own blood and then toward the act of freeing himself from his family in order to love another individual of the opposite sex and to expand himself through procreation before old age comes upon him. The author has come to conceive of thought as a complex play of images which are non-sexual and determined by varying and entangled rhythms, but he claims that these psychic rhythms are for the most part centered around the sexual rhythm as defined above. Narcissism is the sexual love of oneself. Besides the forces which lead a being to expand and advance himself at the expense of his environment, there are vital forces which are of the same nature as the sexual tendencies, but which are directed toward the individual himself. Narcissism is sometimes an element of biological inferiority revealing itself very often as an excellent agent of mental culture; it is one of the essential elements of moral refinement. There are five parts in the volume: (1) The digestive phase of the sexual instinct: the auto-sexual phases of instinct; the common origin of the nutritive and affective tendencies; the undifferentiated forms of the possessive instincts (acquisitive, productive); the psychological significance of the biological functions of appetition and excretion; original relationship between aversion and the possibility of possession. (2) The narcissistic phase of the sexual instinct: infantile auto-eroticism in sexuality without an external object; the place of sexuality among the instincts relative to an individual; the psychology of solitary pleasure, its influence upon the instinctive evolution of the individual; the characteristics of narcissistic mentality. (3) Normal auto-sexuality of an adult: the rôle of narcissism in the constitution of the adult personality; narcissism and the control of the instincts; the revival of infantile egotism in love, the law of instinctive regression and its applications to characterology; digestive characteristics and narcissistic characteristics. (4) Abnormal auto-sexuality: the narcissistic retreat of the unhealthy man; narcissism and sexual perversion; vital refusal and instinctive regression in the neuroses; regressions and affective neo-productivity in the psychoses. (5) Narcissistic culture: mystic narcissism and its biological foundations; narcissistic art; narcissistic literature; narcissism and philosophy.—*Math. H. Piéron* (Sorbonne).

672. **Hesnard, A. La signification psychanalytique de sentiments dits "de depérsonnalisation."** (The psychoanalytic interpretation of the so-called feeling of "depersonalization.") *Rev. fr. de psychanal.*, 1927, **1**, 87–104.—This paper is a contribution to a psychoanalytic interpretation of what has been termed in psychopathology the feeling of depersonalization. This feeling has been described by Janet as occurring particularly in psychasthenic states. The author gives a psychoanalytic study of the depersonalization symptom in a young man, and concludes that it is not a renouncement of external reality, but a concentration of conscious thought on affective internal impressions, a form of narcissism. The depersonalized individual is one in whom the sexual instinct is not fully developed, but remains as a fixation on himself. If such an individual could be weaned from his auto-erotism, the feeling of depersonalization would be dispelled.—*I. H. Coriat* (Boston).

673. **Hughes, A. G. The "repetition compulsion."** *Forum Educ.*, 1927, **5**, 10–16.—Routine and rhythmic repetitions are not necessarily merely pure repetitions of the same mental activity, as in the case of semi-hypnotism. Children's play involving apparent (to adults) tiresome duplication of physical and mental processes lasts only so long as subjectively new elements continue to appear and make the activity interesting. Pure repetitions, if demonstrated, are a sign of

mental decay or defect, with children a danger signal that something is wrong.—*K. M. Cowdery* (Stanford).

674. **Jacobson, A. C. Genius.** New York: Greenberg, 1926. Pp. 160. $2.50.—The author advances and defends the thesis that genius is the product of neuropathic and ethnically inharmonious stock, and that given the native spark, alcohol and disease act to paralyze inhibitions and so release latent powers. A large amount of anecdotal material has been selected and arranged to support this contention.—*R. R. Willoughby* (Clark).

675. **LaForgue, R. A propos du surmoi.** (The question of the super-ego.) *Rev. fr. de psychanal.*, 1927, **1**, 76–81.—An outline of the practical value of an understanding of the ego-ideal (super-ego), for the treatment of the neuroses. The super-ego of the patient is compelled to punish the patient, but how this condition is brought about constitutes a problem which possesses a certain value in practical work in psychoanalysis. It is this problem which the author attempts to elucidate, and he concludes that the super-ego is symbolic of the conflict of family influences in early life, particularly the symbolism of what he terms the "phallic-mother."—*I. H. Coriat* (Boston).

676. **Leonard, W. E. The locomotive god.** New York: Century, 1927. Pp. 434. $4.00.—An autobiography of an active university professor who has been beset by phobias during his whole life and who has suffered from a chronic neurosis during the past 15 years. By "reliving" his childhood he has succeeded in finding the cause but not the cure of the neurosis. "Twilight sleep" yielded much material; crystal gazing produced a few important scenes; hypnotic suggestion, automatic writing, and the word association method did not work. Because of powerful resistances auto-psychoanalysis proved more successful than analysis by the several psychiatrists who were at various times associated with the author. The first great psychic shock occurred at the age of two and a third years. At this time a train was experienced for the first time: the fright occasioned by the uproar and attack feeling became associated with guilt and remorse for having disobeyed the mother by going near the track, with sex because of weakness shown before The Little Girl, with dread of the unknown, fear of death, the need for shelter, and with God. The major part of the book deals with ways in which that early afternoon furnished the pattern for later phobias, for the hundred dreams dug out from the subconscious, for "conduct and motives of conduct," for "emotions, scholarly interests, materials in my poems." The external facts of the experiences recalled have been verified by the mother's diary and by conferences with people connected with the early scenes. By giving a minute account of the childhood experiences that have been relived the author has furnished data for the study of the inner workings of the child mind—the picture drawn is the mind of a normal healthy boy, different from others only in the fact that he was probably unusually intelligent. Incidentally the author makes the statement that his dreams have yielded data that do not verify Freud's theories: they seem not to be "dominantly wish-fulfillments of a sex-nature, realistic or symbolic;" their symbolism is more plastic than according to Freudians; their symbolism has not, "except in relatively few instances," been found to be due to the "Censor."—*M. Goodrie* (Clark).

677. **Lewis, N. D. C. The psychobiology of the castration reaction.** *Psychoanal. Rev.*, 1927, **14**, 420–446.—The first of a series of articles under this heading; the topics covered are Introduction, Biophysiology of Castration, and Historical Considerations. "The castration situation is of such fundamental biological importance . . . that it was thought worth while to assume a longitudinal section of the problem . . . in hopes of determining whether or not it constitutes the root problem of all psychobiological phenomena." The author reviews, and gives three human case studies of, the effects of complete and partial castration; and

"all activities tending to terminate either the soma or the germ cells mean essentially castration." He begins a history of asexualization.—*W. Dennis* (Clark).

678. **Lichtenberger, M. L'état actuel du problème de l'hypnotisme.** (The present status of the problem of hypnotism.) *Prophyl. ment.*, 1927, **3**, 355–365.—A general review of the literature on this question from 1895 to 1924.—*Math. H. Piéron* (Sorbonne).

679. **Lodge, J. H. The illusion of warmth test for suggestibility.** *Forum Educ.*, 1926, **3**, 180–186.—By means of Seashore and Scott type simple resistance box, susceptibility to a suggested illusion of warmth was measured with subjects of both sexes and varied ages. Women and girls were found to be more influenced by suggestion than men or boys; they were also more sensitive to heat. Children were both more suggestible and more sensitive than adults. Although the object heat was applied gradually, introspective reports varied as to the suddenness of the subjective feeling of warmth.—*K. M. Cowdery* (Stanford).

680. **Messer, A. Wissenschaftlicher Okkultismus.** (Scientific occultism.) Leipzig: Quelle and Meyer, 1927. Pp. vi + 152. 1.80 M.—The first section of this book contains a historical review of the development of the scientific study of "occult" phenomena in the more important countries. The greater part of the book is devoted to a review of the most significant parapsychical and paraphysical phenomena with the communication of some observations. Another section discusses the nature of mediums and the correct method of treating them. The concluding section discusses the hypotheses advanced to explain the occult (the deceit hypothesis, animism, spiritism). The author is sympathetic and unprejudiced, but also critical in discussing hotly contested questions of occultism. The book includes a very full account of the literature.—*A. Messer* (Giessen).

681. **Odier, Ch. Contribution à l'étude du surmoi et du phénomène moral.** (A contribution to the study of the super-ego and of the moral ideal.) *Rev. fr. de psychanal.*, 1927, **1**, 24–72.—This paper is a critical appreciation of one of Freud's most recent contributions to metapsychology, *Das Ich und Das Es* (translated into English under the title *The Ego and the Id*, 1927—see Abstract 667). The author does not propose to discuss the varied problems which are so richly suggested by Freud's new formulations of the structure and functions of the mind, but rather to make a practical application of these theories, which he summarizes, to an analysis of a case of glove, boot and corset fetichism with sado-masochistic tendencies. He discusses the symbolism of the fetichistic neurosis and analyzes in turn the masochism, the homosexual components, the castration-complex and the desexualization of the Oedipus complex, all from the standpoint of the newer metapsychological theories of psychoanalysis.—*I. H. Coriat* (Boston).

682. **Santoliquido, R. Observation d'un cas de médiumnité intellectuelle.** (Observation of a case of intellectual mediumship.) Paris: J. Meyer, 1927. Pp. 107. 3.50 frs.—This book contains a report of two conferences in which the author reveals without comment the facts regarding a case of intellectual mediumship which he studied personally during 1906. Then, in a third part, Dr. Geley attempts to arrive at a philosophical conclusion from the facts obtained. It appears, he says, as if the phenomena were due to a third separate individual, which had a distinct autonomous existence from that of the medium and from that of the experimenter. No bibliography.—*Math. H. Piéron* (Sorbonne).

683. **Wenzl, A. Das unbewusste Denken.** (Unconscious thought.) Karlsruhe: G. Braun, 1927.—Real progress in thinking is accomplished without its being conscious to ordinary thinking. This becomes entirely unmistakable if a pause is interposed between the acceptance of the task and its solution, particularly in rapidly progressing intuitive thought. Now, however, psychoanalysis shows that there are dream thoughts clothed in symbolism, which not only are

unconscious, but which also remain unconscious to the dream self as well as to the waking self later. These, nevertheless, although they are unconscious, are translated into the manifest dream content. Whose thoughts are these? Who thinks? In discussing the problem "it thinks" the author believes that for the present situation the assumption of an impersonal unconscious (Giese) is less suitable than the assumption of a soul over-reaching our self. In the last chapter he develops an hypothesis of the psychophysical relationship which is much like the entelechy hypothesis of Driesch, and on this hypothesis he attempts to give an explanation for the difference between the unconscious happening and the happening which becomes conscious.—*A. Wenzl.*

684. **Young, P. C. Is rapport an essential characteristic of hypnosis?** *J. Abn. & Soc. Psychol.*, 1927, **22**, 130–139.—The examiner considered his four subjects as truly in somnambulistic hypnosis as any that he has worked with or has seen others work with. The subjects themselves by their own actions in hypnosis and their declarations afterwards confirm the judgment that they were deeply hypnotized. The conclusion is that, at least in some cases, autosuggestions can be more powerful than heterosuggestions, and that a genuine hypnosis can exist without the semblance of rapport. An experimenter can hypnotize a subject who thereupon can be out of rapport with the experimenter and can come back into rapport only if, as, and when he has determined before he was hypnotized. It seems, too, that in absence of a suggestion to remember, post-hypnotic amnesia is directly proportional to the amount of rapport, and consequently inversely proportional to the number of autosuggestions carried out in hypnosis.—*C. H. Johnson* (Boston Psychopathic Hospital).

[See also abstracts 537, 550, 590, 639, 650, 689, 715, 723, 727.]

NERVOUS AND MENTAL DISORDERS

685. **[Anon.] Jahresbericht der psychiatrischen und neurologischen Klinik in München.** (Yearly report of the psychiatric and neurological clinic in Munich.) *Arch. f. Psychiat. u. Nervenkr.*, 1927, **80**, 1–296.—*W. Wirth* (Leipzig).

686. **Berkeley-Hill, O. Mental hygiene.** *Indian J. Psychol.*, 1927, **2**, 1–14.—This paper is the presidential address delivered before the Psychological Section of the Indian Science Congress. The writer deplores the lack of any adequate attention in India to this all-important subject, and presents the broad outlines of the program of mental hygiene which he believes should be put into operation in the Empire. Thus far in India what has been achieved has been purely the salvaging of wreckage rather than the preventing of catastrophe. Outside the few mental hospitals, mental hygiene is almost totally neglected. Even in the wealthy cities of Bombay, Calcutta and Karachi there is probably not a single competent psychiatrist. It is highly important that the specialists in medicine, education, and social service shall coördinate their diverse efforts. Public opinion needs to be aroused to the importance of this work. Out-patient clinics are badly needed, and there should be started a psychopathic ward in every central hospital throughout India. Either an imperial or a provincial psychiatric department should be organized. Adequate training—in India if possible, but otherwise in Europe or America—should be provided for those who are to enter the psychiatric service. Psychiatrists should be made available for the law courts, jails, and reformatories. The numerous mission societies might be enlisted to aid the social service workers. Better provisions must be soon made for the feeble-minded, and there should be instituted special classes or schools for defective children in all the provinces.—*L. A. Averill* (Worcester Normal).

687. **Enke, W. Die Konstitutionstypen im Rohrschach'schen Experiment.**

(The constitutional types in the Rohrschach experiment.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108**, 645–674.—(From the university clinic in Marburg.) The author determined the correlation between the intellectual and emotional reactions of psychotics and normal persons on the 10 Rohrschach test tables on the one hand, and the Kretschmer body type on the other. The increased sensitivity to color in cyclothymics and the increased sensitivity to form in schizophrenics found by Scholl is confirmed. The ages are differentiated by the tests quite apart from the types of body structure, to which, therefore, they are not to be referred. Hysteria is proved to exist in no uniform constitutional group, but is in its reaction dependent upon type of body structure.—*W. Wirth* (Leipzig).

688. **Hedenberg, S. Über die synthetisch-affektiven und schizophrenen Wahnideen.** (On synthetic-affective and schizophrenic delusions.) *Arch. f. Psychiat. u. Nervenkr.*, 1927, **80**, 665–751.—After an introduction discussing some ten definitions of delusion by prominent psychiatrists, the author criticizes in a detailed manner the theory of Th. Lipp, based on the striving for reality of all ideas. On the basis of this theory the differentiation of the two fundamental aspects of the delusion named in the title is oriented toward a psychological analysis of the normal origin of the consciousness of reality. In place of the mechanical doctrine of association, use is made of the theory of the synthetic activity of the entire psyche, which was developed from modern scientific psychology first of all by Jaspers on the basis of several disease histories. The synthetic-affective delusions also rest upon such a synthesis of the personality with a well marked demand for consistency which corresponds generally with the normal only with the distinction that an idea with strong feeling tone has exerted a disturbing influence on the judgment. If one can understand only psychologically the motivation of the ideas of such patients, if the one-sidedness and the extent of the development are to be explained only from the physiological constitution, the intelligibility of schizophrenic delusions ends. There are primary deviations from the normal which can be explained only on a physiological basis and which appear with the force of sensation and the feeling of passivity, often in a catastrophic manner. The progressive schizophrenic reality is thus a world of contradiction, to which the patient no longer reacts.—*W. Wirth* (Leipzig).

689. **LaForgue, R. Schizophrénie et schizonoïa.** (Schizophrenia and schizonoia.) *Rev. fr. de psychanal.*, 1927, **1**, 6–18.—This paper was presented at the first Congress of French Psychoanalysts, held in Geneva during 1926. The author's studies in schizophrenia have led to the concept of what he terms "schizonoia," which is here outlined in contrast with the schizophrenic psychoses. By the latter he means the group of diseases which Bleuler has termed the "process psychoses," characterized by negativism, ambivalence and autistic thinking, to which the author adds "scomotization" or an attempt of the individual to deny everything which conflicts with his ego. Affective disorders are very characteristic of schizophrenia, and therefore a study of the affectivity will help to elucidate this complex problem. The idea of affective valencies, of their autosaturation by autistic thinking, has to be taken into consideration when the problem of the conduct of the schizophrenic subject with the outside world is investigated. The author has studied psychoanalytically a number of cases of severe mental disorders which from an early period of development have shown a more or less pronounced disorganization of affectivity (libido). The early stages of libido organization (pre-genital), are extremely valuable for an understanding of schizophrenia. From the intrauterine and intrafamilial stages of development the individual passes to the extrafamilial stages, and the transition to this latter is of the highest importance for mental health and integrity. It is the struggle to break off the early mother fixation, to find a compensation for it, combined with

the dual tendency to remain anchored to the earliest libido levels, which constitute the difficulty termed "schizonoia."—*I. H. Coriat* (Boston).

690. **Moeller, —. L'éducation des enfants anormaux et la psychologie scolaire en Lettonie.** (The education of abnormal children and school psychology in Latvia.) *Prophyl. ment.*, 1927, **3**, 275–282.—An asylum for the feeble-minded established at Riga gathers together children from 7 to 17 years of age who have an Binet-Simon intelligence quotient of 50 to 60. This asylum is organized in such a fashion that the children themselves do all the work necessary for their existence. The effort is thus made to give them a trade and to render them fit for life. A second asylum at Ruigen (80 kilometers from Riga) is organized like the first, and serves to instruct the children in agriculture. For the children of these towns who have a less pronounced deficiency, there have been in existence since 1923 some auxiliary schools in which the children are day-scholars and in which the schedule for the four elementary classes is accomplished in six years.—*Math. H. Piéron* (Sorbonne).

691. **Noyes, A. P. A textbook of psychiatry: for students and graduates in schools of nursing.** New York: Macmillan, 1927. Pp. xii + 333. $2.60.—"The material contained in this book represents the results of an experience of several years in lecturing on Psychiatry to students of Saint Elizabeth's Hospital Training School for Nurses, to members of the Army School of Nursing and to student nurses of other affiliating training schools." The book opens with chapters on the *Development and Purpose of the Mind, The Structure of the Mind and Its Sources of Energy, Mental Mechanisms, The Nature of Mental Diseases, Causes of Mental Disease, Mental Processes and Their Disorders,* and *Classification of Mental Diseases.* Then follow a number of chapters dealing with the various psychoses, the psychoneuroses, epilepsy, and mental deficiency. These are discussed mainly from a descriptive and practical standpoint. The abnormalities in mind and behavior are described and the special nursing problems arising in connection with the various types of patient are considered. There is also a special chapter toward the end of the book on the *Care and Management of the Psychotic* as well as chapters on *The Nurse and Her Professional Relations* and *Mental Hygiene and Social Psychiatry.* It is maintained that the task of mental hygiene is "to assist in the cultivation of mental habits that will facilitate the individual's adaptation and increase his constructive social efficiency and thereby prevent mental disease or other forms of maladjustment." The various schools of psychiatric thought are not discussed in this book, but special emphasis is laid upon the psychological and psychoanalytical explanations of the forces that determine character and personality.—*J. W. Bridges* (McGill).

692. **Rosenthal, C. Über das verzögerte psychomotorische Erwachsen, seine Entstehung und seine nosologische Bedeutung.** (On psychomotor retardation, its origin and nosological significance.) *Arch. f. Psychiat. u. Nervenkr.*, **81**, 159.—The concept of psychomotor retardation introduced by Pfister is defined as a condition characterized by the inability to move with complete clarity of consciousness. It is of short duration and frequently associated with anxiety. Two striking cases are communicated: (1) A 35-year-old woman suffering with epilepsy. Reported to have had convulsions as a child. Since 16 years of age has had psychomotor retardation mostly with an emotion of anxiety, in longer or shorter intervals. Occasionally she has several attacks in one night, which are followed by headache and depression lasting several days. (2) 46-year-old man with Jacksonian epilepsy following injury to the skull. Psychomotor retardation usually combined with symptoms of a Jacksonian attack. The situation is explained by reference to a destruction of the normal development. While this development is treated as a chain reflex which proceeds from the thalamus over the striatum- periphery-thalamus to the cortex, in retardation following a defect

in the strio-thalamic apparatus the impulse might make a short circuit from the thalamus to the cortex without passing over the striatum-periphery. This defective conduction might be conditioned by epilepsy, might be related to the weakening effect of some irritant, or in nervous exhaustion might be due to some purely functional weakness. In conclusion, the condition described is related to some of the phenomena appearing in true narcolepsy.—*C. Rosenthal* (Breslau).

693. **Schuster, P. Autoptische Befunde bei Zwangsgreifen und Nachgreifen.** (Autopsy findings in compulsive seizures and convulsive tendencies.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108,** 715–733.—(From the neurological section of the Hufeland Hospital in Berlin.) The section findings in 15 cases show, in agreement with the previous experience of other authors, defects in the frontal lobe. Along with these, however, changes in the lenticular nucleus must probably be taken into consideration as causes for the involuntary convulsions and convulsive tendencies.—*W. Wirth* (Leipzig).

694. **Stern, R. Über die Aufhellung der Amnesien bei pathologischen Rauschzuständen und anderen transitorischen Bewusstseinstörungen durch Hypnose und Schlafmittelhypnose.** (On clearing up amnesia in conditions of pathological intoxication and other temporary losses of consciousness by means of hypnosis and hypnotic sleep.) *Zsch. f. d. ges. Neur. u. Psychiat.*, 1927, **108,** 601–624.—(From the psychiatric and neurological clinic of the University of Vienna.) Amnesia is cleared up with relatively greater ease by the use of hypnosis in pathological intoxication than in epileptic conditions. From a forensic point of view, however, it is not to be considered except in hysterical amnesia. The results secured by means of hypnosis are to be accepted with caution and further verification must be demanded. Amnesia alone does not furnish a conclusive answer.—*W. Wirth* (Leipzig).

695. **Wimmer, A. Über die psychogenen Reaktionen der geistig Gesunden, ihre psychologische Natur und ihre Bedeutung. Ein Beitrag zur experimentellen Erfassung der psychischen Konstitutionsartungen.** (On the psychogenic reactions of the mentally healthy, their psychological nature and their significance. A contribution to the experimental study of the types of psychic constitution.) *Arch. f. d. ges. Psychol.*, 1927, **58,** 1–80.—O. Löwenstein, in studying the involuntary expressive movements which characterize the emotional reaction to a stimulus (a pinprick or a sudden noise) has discovered that these movements often occur in two consecutive phases. He calls these respectively the "primary," and the "secondary" or "psychogenic" reaction, and finds that the latter is an index to the psychic constitution of the individual. It occurred in practically all of his hysterical subjects and in about half of his normal subjects (*Experimentelle Hysterielehre*, Bonn, 1923). Wimmer has observed the expressive movements (respiration, movements of head, hands and feet) of 8 normal subjects; 7 displayed psychogenic reactions. The primary reaction is correlated on the introspective side with feelings of pain and fear; these decay simultaneously with the sensation evoked by the stimulus. The psychogenic reaction corresponds to the feelings (pleasant or unpleasant) accompanying the ideas which the primary experience arouses; the primary experience is actively apperceived in relation to the self. The magnitude of the psychogenic reaction is broadly correlated with susceptibility to the induction of fear through suggestion, and with the ability to simulate an emotion at will. Wimmer regards the difference between the normal person with psychogenic reaction and the hysterical as a matter of degree. He believes that Löwenstein's method is of great importance for psychiatry.—*D. McL. Purdy* (California).

[See also abstracts 563, 582, 611, 621, 649, 794.]

SOCIAL FUNCTIONS OF THE INDIVIDUAL

696. **Allport, F. H. The psychological nature of political structure.** *Amer. Pol. Sci. Rev.*, 1927, **21**, 611–618.—Certain common habits of response are the bases of political structures. Such terms as "the law," "the state," and "the nation," which are regarded as institutions or objective entities by the sociologist and political scientist, are found to be "regular and mutually expected ways of behaving" based upon common attitudes. These responses, together with their stimuli, are included under the term "political behavior." Political stimuli are a special sub-class of social stimuli and involve not only the stimulus as such, but the individual making the response. For example, the "voice of constituted authority" (the objective stimulus) is a political stimulus only in so far as it involves a certain set of submissive attitudes of the individuals who react to it. Some of the basic problems for investigation include: (1) What is the nature of the state in terms of behavior attitudes? (2) In what sense does representative government really represent individuals? (3) What are the psychological components of a party machine? (4) What is the nature of social control? (5) What is meant psychologically by "sovereignty"? Another group of problems center around the question of the development and origin of these political structures, i.e., the development of the political habits which individuals have acquired as a result of living together. The study of the habits and attitudes of conflicting groups, with especial emphasis on the mutual modification of these processes, should yield important data with reference to future adaptations in the field of political structures. The problem of nationalism is involved here, since the essence of nationalism is to be found in the habit patterns and attitudes of individuals living within certain geographic limits.—*F. Fearing* (Northwestern).

697. **Augustin, V. E. Moving picture preferences.** *J. Delinq.*, 1927, **11**, 206–209.—An analysis of the response of a middle-class neighborhood to various types of movies.—*H. L. Koch* (Texas).

698. **Callahan, J. L. A theory of esthetics according to the principles of St. Thomas Aquinas.** Washington: Catholic Univ. of America, 1927. Pp. 132. —*W. S. Hunter* (Clark).

699. **Catlin, G. E. G. The delimitation and mensurability of political phenomena.** *Amer. Pol. Sci. Rev.*, 1927, **21**, 255–269.—The concern of politics is with "a field of human behavior characterized by the recurrence of specific behavior patterns." The subject of study in the field of politics is not states and governments, but the study of the "recurrent situation of the relationship of wills in a fashion of control." Every control situation between man and man is a political situation, and the study of this essential political process makes relevant investigation of class organization, human control in non-state organizations, methods of organization of parties, boards of directors, etc. The word "will" emphasizes both the active and transient element which "carries our thoughts on to external action as distinct from the incomplete act of mental contemplation." The changes in political institutions are the results of the interaction of these "wills" manifesting themselves in human control situations. The control situation does not mean domination, but refers to the possibility of conjoint action. Different degrees of balance are involved in the control relationship, e.g., the conqueror-conquered relationship, the imperfect solution of the compromise, and the complete parallelism of wills. The primary problem of politics is not concerned with the paraphernalia of government, but with the description of the simple political act which is analogous to the "business transaction" in economics. A second group of problems have to do with the measurement of the different strengths of the control relationships, i.e., the quantitative determination of power as an index of the strength of domination. These quantitative studies may be in the direction of (1) the measurement of the physical

and material equipment and of the intelligence of the human material which is used in political action, (2) the measurement of the intensity of feeling as it expresses itself as persistence of willing, e.g., the cohesiveness of political groups, and (3) the measurement of the strength of organization in terms of its capacity to hold together and to command support.—*F. Fearing* (Northwestern).

700. **Dillingham, L. B. The creative imagination of Théophile Gautier.** *Psychol. Monog.*, 1927, **37**, No. 1. Pp. 355.—A study of the affective and emotional characteristics, sentiments, æsthetic interests, literary technique, and intellectual equipment of Théophile Gautier.—*F. A. C. Perrin* (Texas).

701. **Durea, M. A. Social factors in dependency.** *Tr. School Bull.*, 1927, **24**, 81–89.—The purpose of this study of 227 cases was to attempt an analysis of the social factors of dependency and to raise questions regarding the cogency of the theory of social causation. Immorality was the contributing factor in 34% of the cases, death of mother and separation or divorce each 19%, death of both parents 11%, death of father 7%, leaving 10% to economic or physical incapacity and miscellaneous factors. Besides appearing as the major factor in 34% of the cases, immorality appeared as a contributing cause almost twice as many times as any other social factor. The data indicate the greater potency of some factors than of others as causes of dependency. It appears that immorality is not a social cause of dependency, but is one of the symptoms of some more fundamental deficiency. At the root of the whole problem are probably causes inherent in the individual. The investigator asks whether the difference between responsibility and irresponsibility is not related to a germinal element. It is suggested that dependents are defective both in general endowment and feeling. "If dependency is regarded from the biological point of view, and dependents are considered as incapable of making the most adequate and exacting kinds of social adjustment, it is patent that psycho-social studies must look more deeply than the immediate conditions which have precipitated dependency. Granting that children inherit the biological qualities of their parents, it is particularly worth noting that the adoption of such a viewpoint would tend to emphasize discriminative methods of placement."—*E. M. Achilles* (Columbia).

702. **English, H. B. Two suggestive experimental approaches to social psychology.** *J. Abn. & Soc. Psychol.*, 1927, **22**, 170–171.—The use of "audience" voting was invoked to test the assertion of common-sense social psychology that no one is ever convinced by argument. A Harvard-Wesleyan debate was used as an example in which the audience displayed a high impartiality. The use of group preference expression was illustrated by essays of Chicago school children in which there was a marked desire for a place of quiet in which to rest in the ideal playground.—*C. H. Johnson* (Boston Psychopathic Hospital).

703. **Florence, P. S. Economics and human behaviour: a reply to social psychologists.** New York: Norton, 1927. Pp. 95, $1.00.—"Orthodox economics" is, according to the author's definition, "an attempt to interpret events in human behavior (price and terms of exchange) by reference to calculated balancing of utility against cost by considerable numbers of producers and consumers." In answer to the criticism of social psychologists of the idea of man as a "calculating creature," the point is made that psychologists get nowhere by the use of the concept of a " 'normal' instinctive animal" as it is no better, in a scientific sense, than the economist's own term, " 'normal' economic man"; and that it is fallacious to deduce from a view of certain general and powerful instincts how men will act under certain circumstances. Economics must not accept dogmatic psychological assumptions, but must do its own careful statistical field work, followed by statistical mathematics. It can then make "theoretical, hypothetical 'constructions' " from which interpretations of the measured facts may be drawn.—*M. Goodrie* (Clark).

704. **Frazer, J. G. Man, God, and immortality: thoughts on human progress.** New York: Macmillan, 1927. Pp. xvi + 437. $3.00.—A more fitting name for the branch of anthropology commonly called "social" is "mental." It is with mental anthropology that this volume is concerned. The evolution of mind is traced from perhaps bare sensation to the comparatively high level of intelligence of civilized races of to-day. The generalizations which are here presented are selected from the more detailed works of the author, and the extensive masses of fact upon which they are based are omitted in the interests of simplicity. The fact that savagery is fast approaching extinction makes it imperative that scientists of the present day devote themselves to a study of the psychology of existing primitive peoples at different stages of progress, and thus construct a rough scale of mental evolution. In a quarter of a century it may be too late to obtain any first hand knowledge of the embryology of human thought and institutions. Four main divisions of the book are: The Study of Man; Man in Society; Man and the Supernatural; Man and Immortality. The discussion ranges from magic through religion to science. The Age of Magic occupies on the intellectual side a place similar to that held by the Age of Stone on the material side. Magic, religion and science are nothing more than successive theories of thought. "We should analyse the comparatively simple phenomena of savage thought into their constituent elements before we attempt to perform a similar operation on the vastly more complex phenomena of civilized beliefs."—*M. P. Montgomery* (Faribault, Minn.).

705. **Frenay, A. D. The suicide problem in the United States.** Boston: Badger, 1927. Pp. 200.—This book is a statistical study of suicide, based on publications of the United States Census Bureau, Division of Vital Statistics, and on other federal, state, and municipal records and publications. About ten thousand suicides a year occur in the United States. While total mortality has decreased in recent times, the suicide rate has increased, reaching its highest point in 1908. From here on it remained very nearly constant until the World War, when a decrease began. Compared with other countries the United States is found to have a medium rate. Within the country the Northeastern States have a relatively low rate, the Central States a somewhat higher one. The Southern States have the lowest rate, and the Western States the highest. The low rate of the Southern States is due to the high percentage of negroes in the population, the rate for negroes being about one-fourth that for whites. Three times as many men as women commit suicide, and there is a tendency, especially with men, for the rate to increase with advancing age. Further statistical analyses are made of the occupational, marital, and economic status of suicides. It is not found possible to establish the reality of a constitutional factor predisposing to suicide, though the author does find that disease, especially mental disease, may be an important contributory cause. Suicide is especially frequent among the foreign population, so the decline in the rate since the World War is to be explained in part by the limitation of immigration. The book ends with a discussion of the religious aspect of the problem. In the United States, as in other countries, statistics show that the suicide rate is lower for Catholics than for Protestants. A bibliography and a series of statistical tables are appended.—*J. T. Metcalf* (Vermont).

706. **Fricke, C. W. Some of the important changes in the California criminal law.** *J. Delinq.*, 1927, **11**, 184–188.—*H. L. Koch* (Texas).

707. **Garth, T. R. The community of ideas of Indians.** *Psychol. Rev.*, 1927, **34**, 391–399.—Continuous association tests were given white and Indian girls and boys to discover whether there are significant racial differences in community of ideas. The author's conclusion, on the basis of his correlations, is that Indians

and whites are not found to be different in community of ideas so far as his data are concerned.—*H. Helson* (Kansas).

708. **Ginzburg, B. Anthropology and the rights of man.** *J. Phil.*, 1927, **24**, 542–546.—Both the doctrine of the equality of races and the doctrine of the equality of individuals within a race rest on moral postulates. Therefore they are not to be settled by facts of psychology or anthropology.—*A. P. Brogan* (Texas).

709. **Herskovits, M. J. The negro and intelligence tests.** Hanover, N. H.: Sociological Press, 1927. Pp. 14. $0.10.—Reprinted, with additions, from *Ped. Sem.*, 1926, **33**, 30–42.—*R. R. Willoughby* (Clark).

710. **Hockett, J. A. A determination of the major social problems of American life.** *Teach. Coll., Contrib. Educ.*, 1927, No. 281. (Also published as *Soc. Sci. Monog.*, No. 2, Lincoln School of Teachers College.) Pp. viii + 101.—The aim of this study is "to furnish to those persons who deal with education for citizenship a list of the more important problems and issues of social, political, and economic life in contemporary America." The 396 problems and issues given were obtained by (1) a careful analysis of 23 books by "frontier thinkers" on these problems, (2) an analysis of "Current Events" in the *Literary Digest* for 1920–1925, and (3) a random sampling of the short editorial paragraphs in the *Outlook*, the *Independent*, the *New Republic*, and the *Nation* for the years 1921, 1923, and 1925. A final chapter on *Application and Interpretation of the Findings* and an appendix giving the names of specialists who recommended the books used in the study are included.—*H. H. Remmers* (Purdue).

711. **Killick, V. W. Suggestions for parental administration calculated to reduce juvenile delinquency.** *J. Delinq.*, 1927, **11**, 194–205.—The author points out that juvenile delinquency is increasing in Los Angeles County, 42% of all prisoners in 1926 being less than 25 years of age. The most prevalent crime is the stealing of automobiles. A crime-prevention campaign which was effective is described, as are also home factors which have been provocative of delinquency.—*H. L. Koch* (Texas).

712. **Klug, J. Die Tiefen der Seele. Moralpsychologische Studien.** (The depths of the mind. Studies in moral psychology.) (3d ed.) Paderborn: F. Schöningh, 1927.—This book seeks to interpret the phenomena of the moral life when these are considered not merely from a moral-theological point of view, but also from a moral-psychological point of view. When the man who errs as well as the man who aspires reaches for help it aims to provide this help in a genuinely psychological manner. Such fundamental problems of moral psychology as "constitution and character, inhibitions, love and sex, scepticism, autonomy, conversion," etc., are discussed. Detailed references to the literature are included.—*J. Klug* (Passau).

713. **Kohs, S. C. What science has taught us regarding the criminal.** *J. Delinq.*, 1927, **11**, 170–180.—The author scores society for its failure to use in its handling of the delinquent and criminal the contributions of science. Among the scientific discoveries bearing upon the problem of the anti-social individual are the following: that criminality is not inherited but learned; that man is not fundamentally sinful; that enormous individual differences exist in human intellectual equipment; that even limited intellect may be socially and economically productive, if properly handled; that reform can be effective only to the extent that it recognizes the fundamental human drives; that the treatment of delinquents must be individual and in terms of the causes of the anti-social trends; that mere knowledge of right and wrong does not insure moral behavior; and that crime can be predicted and controlled.—*H. L. Koch* (Texas).

714. **Kuenzel, M. W. A follow-up case study.** *Tr. School Bull.*, 1927, **24**, 90–96.—The article describes the method of psychological follow-up by objective

estimation of the behavior consequences of individual treatment.—*E. M. Achilles* (Columbia).

715. **Langdon-Davies, J. A short history of women.** New York: Viking Press, 1927. Pp. xiv + 382. $3.00.—This is a "history of human ideas about the nature and differences between the two sexes." It begins with a brief exposition of the biology of sex, in order to make it easier to determine which factors in a woman are due to her biological nature and which are the result of false ideas. It aims to explain the factors which have combined to form the myth of the "female character." The primitive ideas about women were influenced by a taboo outlook and the worship of fertility; the primitive Christian, by ideas about the next world and the impurity of anything earthly; the 17th century, by Puritanism; the eighteenth century, by the effects of the Industrial Revolution. It is seen that the "history of women is built upon a series of fictions, . . . invented to explain differences between men and women which were as mysterious as they were obvious. . . ." There is an epilogue in which the author makes a prophecy about the woman of the future. The book was written with the purpose of stimulating thought rather than with the idea of giving complete information.—*M. Goodrie* (Clark).

716. **Lasswell, H. D. The theory of political propaganda.** *Amer. Pol. Sci. Rev.*, 1927, **21**, 627–631.—Propaganda is defined as "the management of collective attitudes by the manipulation of significant symbols." Certain symbols—words, bodily postures and gestures—represent certain standard meanings for a given group or culture, and may be employed in reaffirming or redefining attitudes and thus have a propagandist function. The expression "collective attitude," to which these group symbols may refer, connotes a collection of individual acts representing attitudes which have a certain uniformity, and it is the technique of the alteration of these attitudes, especially by means of significant symbols, which is referred to under the term propaganda. It is necessary to distinguish the changing of opinions through deliberation, education and psychiatric interviews from the alteration of opinion by means of propaganda *per se*. In the case of deliberation the solution is not prejudiced in advance. In the case of the psychiatric interview, the change of opinion is the result of an intimate personal relationship, while the propagandist restricts himself to the individual as a member of a group. The criteria according to which propagandas may be classified include the following: their purposes (specific or general), temporal course (permanent or temporary), nature of personnel (professional or amateur), and the nature of the object, i.e., the propaganda may be directed toward establishing an attitude regarding a particular person, e.g., Mr. Coolidge, or toward a group, e.g., the Japanese. The strategy of propaganda may be described in stimulus-response terms as the multiplication of those stimuli which evoke desired responses, and the nullification of those stimuli which are likely to evoke the undesired responses. Propaganda has appeared in the past whenever a social system sanctioned by antiquity is broken up by a tyrant. In modern life the increase of facilities of communication has brought about a state in which discussion and persuasion has supplanted violence and coercion as a means of changing opinion or modifying action. "Democracy has proclaimed the dictatorship of palaver, and the technique of dictating to the dictator is named propaganda." —*F. Fearing* (Northwestern).

717. **Lindsey, B. B., & Evans, W. The companionate marriage.** New York: Boni & Liveright, 1927. Pp. xvi + 396.—Companionate marriage is legal marriage, with legalized birth control, and with the right to divorce by mutual consent for childless couples, usually without payment of alimony. It is already an established social fact, but owing to the laws governing the dissemination of scientific contraception, it is practiced only by the educated. The poor and socially

unfit, who need it most, do not have access to the necessary knowledge. Numerous case studies are cited to show that youth knows more than middle age, and that the latter, in many cases, is taking the cue from the very ones who are considered so immoral. The intimate relation between birth control and the companionate shows the latter to be the identical marriage many are living in who decry it. The economic factors entering into marriage are shown to make reproduction prohibitive in the majority of cases. Trial marriage has the psychological element of uncertainty, whereas the companionate admits the possibility of failure; but in the case of ultimate failure, the union may be dissolved by divorce, the union being childless by virtue of knowledge of scientific contraception. If trial marriage psychology emphasizes the element of uncertainty to the extreme, the psychology of traditional marriage ignores it altogether. It is possible for persons to enter the companionate with a trial marriage philosophy, but the same is true of the traditional marriage. For such, the secret union is easier and involves less responsibility; the companionate would not invite many of that type. The dogmatism of the Christian religion concerning sex relations is no longer a restraining influence on the younger generation, but a rational thought is manifesting itself instead. Lindsey presents drafts of (1) a bill to legalize the authorized giving of contraceptive advice to married women; (2) a bill to grant immediate divorce to childless couples upon mutual desire; (3) a bill to withhold or grant support and alimony to a divorced woman according to the conditions of the case.—*R. Williams* (San José, Calif.).

718. **Lowie, R. H. Prestige among Indians.** *Amer. Mercury*, 1927, **12**, 446–448.—The intense regard for the opinion of the community which makes the collection of original data difficult for the anthropologist induced the warlike tribes to throw away their lives in reckless feats of bravery or undergo prodigies of self-torture, while groups in which property was respected rewarded magnificent expenditure with similar public esteem.—*R. R. Willoughby* (Clark).

719. **Peters, A. Psychologie des Sports.** (The psychology of sport.) Leipzig: Der Neue Geist Verlag, 1927. Pp. xv + 93.—Sport (in its familiar sense and also in a broad philosophical sense as a kind of escape attitude taken towards the sterner aspects of reality) is an activity of the human being which grows out of a combination of the play element in human nature and the struggle (*Kampf*) element. Both elements, however, as developed in the sport attitude and activity, are distorted from their true metaphysical form and content. Play, in itself a free, spontaneous, ecstatic activity, is in sport robbed of its joyous, untrammeled spontaneity; struggle, in itself at best interpreted as an opportunity for the individual to lose himself in a self-forgetting striving for some social or other supra-personal value, as an opportunity to win "inner freedom," is in the sport attitude wasted in unreal efforts to "break a record," is robbed of its divinely courageous (*gotterfüllten Mutes*) quality. Sport, the sporting attitude, sporting activity—these represent essentially unreal things; the "rhythm of life," stern metaphysical reality, does not enter into the "sport life." The tragedy of real life is missed, the rigorous, purifying contact with reality is avoided, and inner emptiness results.—*F. E. Morris* (Connecticut College).

720. **Schultz, J. Psychologie des Wortspiels.** (The psychology of plays on words.) *Zsch. f. Aesth.*, 1927, **21**, 16–37.—Aristophanes, Cicero, Lessing, Heine, Rabelais, Shakespeare and others delight in various kinds of plays on words, among which six types may be distinguished: the infantile, taking pleasure in jingle, rhyme, and dialect; the clownish, rioting about with heavy misunderstandings due to homonyms, onomatopoeia, and assonance; the artistic, far more aristocratic and clever at double meanings and unusual rhymes; the playful, court jester type, comfortable, grinning and punning; what may be called the "witty," smiling derisively to sting an antagonist or take a flip at innocence;

and what may be called the "ingenious," employing striking juxtapositions, bold word-pictures, and dazzling contrasts to ornament and strengthen serious discourse.—*W. C. Trow* (Michigan).

721. **Sherman, C. L. The moral self.** Boston: Ginn, 1927. Pp. 365 + x. $2.60.—This simplified textbook in ethics deals with the development of the "moral self" from "biological foundations to metaphysical implications." Mechanical, logical, organic, purposeful, and self-conscious types of mental organization are discussed as determinants of the direction and nature of moral growth. The "moral self" is said to be biologically and consciously conditioned, the latter process involving feeling, cognition, and volition. There is a detailed discussion of the social factors which influence the development of the "moral self," and of the factors involved in moral judgments. The latter are classified and discussed at some length. While psychological sources are constantly appealed to, William McDougall being the most frequently quoted individual, there is nothing on behaviorism and its treatment of the development of personality. At the conclusion of each section there is an extensive bibliography.—*N. L. Munn* (Clark).

722. **Smith, G. E., Malinowski, B., Spinden, H. J., & Goldenweiser, A. Culture: the diffusion controversy.** New York: Norton, 1927. Pp. 106. $1.00.—4 essays. In the first G. Elliot Smith argues for the diffusion of culture from the Nile Valley. In the second essays Malinowski criticizes this viewpoint and emphasizes the fact that civilization "has been imposed by the natural conditions which drive man upon the path of progress with inexorable determinism." Spinden criticizes the outstanding hypotheses of the "romantic school" and gives arguments in favor of the "prosaic school" and of invention rather than diffusion. Goldenweiser criticizes points made by Smith and Malinowski and makes the point that often a "careful and thorough estimate of geographical and historical probability and evidence must be called into consultation" in order to determine whether invention or diffusion has taken place.—*M. Goodrie* (Clark).

723. **Starr, F. Fujiyama.** Chicago: Covici-McGee, 1924. Pp. 158.—An account of the history and customs of the sacred mountain, together with the author's experiences in association with it. Of psychological interest are the folk-lore and religious observances connected with the mountain, the dominant influence it exerts on national thought, and, in particular, a cult associated with a lava cave called "The Womb," whose communicants "nurse" at stalactites within the cave, and upon emergence are dressed in infant clothing and fed on pap.—*R. R. Willoughby* (Clark).

724. **Töppen, H. Neuere Beobachtungen über die Psychologie der zu lebenslänglicher Zuchthausstrafe verurteilten oder begnadigten Verbrecher.** (Recent observations on the psychology of criminals sentenced to life imprisonment or pardoned.) Leipzig and Vienna: Franz Deuticke, 1927.—This book is presented as a grouping of studies in criminal psychology and in medicine. The results of these studies are united into a complete picture somewhat in the manner of a mosaic, which permits the types of criminals studied to be classified according to the more significant points of view. In regard to the method of study, it may be said that, as the possibility presents itself, it is attempted to lead the criminal to a free and natural expression of his motives and lines of thought either by means of an interview or by a written statement. The securing of a written statement where it proves possible often leads to the innermost depths of the criminal's mind. The author reports on 56 cases, in which an exhaustive study was made both of heredity and environment. The hereditary taint, the mental condition, the intelligence, as well as the age at the time of the offense and the influence of orphanhood, illegitimate birth, education and the spirit of the time are all carefully studied. Likewise the attitude of the offender toward society before his crime, his previous servitude, his conduct during detention, as well as

the manner of death of the victim and the relation of this to the personality of the criminal, are considered in detail. From this total complex of questions an explanation for the motive of the act and the mental condition at the time it took place is sought within the compass of the personality picture.—*H. Töppen* (Münster in W.).

725. **Weidenreich, F. Rasse und Körperbau.** (Race and constitution.) Berlin: Springer, 1927. Pp. 187. M. 14.40.—(201 illustrations.) It has been a question whether the various distinct types of body-build found in such a mixed population as, say, that of the United States, do not merely indicate racial differences, rather than differences in physical constitution. Weidenreich shows that these distinct types of constitution occur equally in all races, past and present; hence they are not merely racial characters; although he admits that the same trait may be either a racial character or a constitutional character, depending on circumstances, since there is no sharp distinction between the two sorts of characters.—(Courtesy of *J. Hered.*)

726. **Woodburne, A. S. The religious attitude: a psychological study of its differentiation.** New York: Macmillan, 1927. Pp. vii + 353. $2.50.—The author, professor of mental and moral science in the Madras Christian College, has attempted to show how, by "reflective social experience," the attitudes of magic, science, æsthetics, and ethics have become differentiated from the religious attitude. Attitudes are defined as conscious and habitual tendencies to react in a characteristic manner to certain types of stimuli. The religious attitude is differentiated in human experience as a social attitude toward the extra-human environment, while the scientific attitude is a mechanical attitude toward essentially the same environment, the difference being in attitude and technique. The two attitudes are not necessarily antithetic; both may be necessary in giving a complete description of the cosmos, both are interested in controlling the environment. Both of these attitudes have advanced in proportion as they have been able to eliminate the attitude of magic, which belongs to "the uncriticized continuum" of primitive man. The æsthetic attitude, while highly imaginative, is not as assertive as that of religion. Morality is complete only in so far as it is combined with the religious attitude. The author's viewpoint is functional. He makes frequent use of the cognitive-affective-conative concepts. A large part of the data supporting his conclusions is treated genetically and comes from a study of primitive religions, especially those of India.—*N. L. Munn* (Clark).

727. **Wolfe, W. B. Psychopathology of the juvenile delinquent.** *J. Delinq.*, 1927, **11**, 159–169.—The author contends that every delinquent act is a protest against an existing social order. Hence, the solution of a problem of delinquency lies in a careful analysis of the genesis and development of the anti-social conduct, the obviation of the more flagrant causative factors, and the presentation to the delinquent in convincing fashion of a better solution of his problems. The poor, the malformed, and unloved, to the extent that their task of compensating is great, are particularly liable to resort to conduct not acceptable to society.—*H. L. Koch* (Texas).

728. **Yankwich, L. R. The other side of the shield.** *J. Delinq.*, 1927, **11**, 189–193.—A criticism of some of the legal reforms advocated by California's Crime Commission.—*H. L. Koch* (Texas).

729. **Young, K. Source book for social psychology.** New York: Knopf, 1927. Pp. xxvii + 844.—This book contains 229 readings, mainly excerpts from textbooks and journal articles, though some are taken from private documents and anonymous manuscripts gathered by the author. A few classics are included, but most of the material is comparatively recent. Although the author states in the introduction that he believes a more adequate approach to social psychology can be made through the group than through the individual, he devotes at least

one-fourth of his book to passages which represent other viewpoints, such as those of Allport and Giddings. Besides the theoretical discussions, there are descriptions of specific social situations such as Prince's treatment of the Halifax disaster and Jane Addams' discussion of *A Modern Devil-Baby*. The readings cover the following topics: evolution, pre-human and human social life, social groupings, controls and culture standards, original and instinctive nature, individual differences and intelligence, emotions, feelings and will, environment and habit formation, imitation, suggestion, sympathy and compensation; mental processes and social behavior, personality and social conditions, family and group pressures, theories of personality, personality and the mental patterns of the group, myths and legends, prejudices, leadership and prestige, crowd behavior, the audience, mental epidemics, public opinion, and propaganda. The chapters are organized so that the book may be used either as a source book or as a class text.—*A. F. Jenness* (Syracuse).

[See also abstracts 558, 584, 643, 660, 741, 743, 746, 784, 806, 818.]

INDUSTRIAL AND PERSONNEL PROBLEMS

730. **[Anon.] Annual leaves with pay.** *Pub. Person. Stud.*, 1927, **11**, 230–232.—Analysis of data regarding leaves of absence leads to the conclusion that there is no general agreement as to the reasons for leaves. In general, policies, if any, are the result of compromise with traditions, economic costs, psychological factors, social policy, beliefs and even mere whims. In the public service there is no uniformity; discriminations are made to favor particularly the clerical, scientific, and supervisory groups; amount varies from one to four weeks; wording of rules as to leaves could be clarified if expressed in terms of "hours of absence from regular duty"; the time at which leaves are taken is usually left to the appointing authority, but only after a minimum length of service. Recommendation is made that the effects of leaves on quality and quantity of output be investigated.—*K. M. Cowdery* (Stanford).

731. **[Anon.] List of references on vocational guidance.** Dept. of the Interior, Bureau of Education, Washington, D. C., Library Leaflet No. 33, May, 1927.—*R. R. Willoughby* (Clark).

732. **Bartlett, E. D. A test to gauge business knowledge.** *Person. J.*, 1927, **6**, 199–204.—A test for gauging business knowledge (or intelligence?) has been constructed in spiral omnibus form, with arithmetic problems and items of business information, business judgment, and vocabulary. The test has been used in selecting men for "positions of responsibility" in the Atlantic Refining Company. The correlation between the test and estimates of business knowledge (50 cases) is .79; between the test and salaries, .37.—*A. W. Kornhauser* (Chicago).

733. **Brewer, J. M. Causes for discharge.** *Person. J.*, 1927, **6**, 171–172.—A tabulation of reasons for discharge from industrial establishments shows 34% due to lack of skill or knowledge and 62% due to deficiencies of social, moral, or character qualities. The possible significance of the facts for vocational education and guidance and for personnel work is suggested.—*A. W. Kornhauser* (Chicago).

734. **Bureau of Public Personnel Administration Staff. Suggested tests for laboratory assistant.** *Pub. Person. Stud.*, 1927, **11**, 233–239.—Tests, as yet unstandardized, are suggested for trial in selecting laboratory assistants for routine service of examinations in the hospital, public health, chemical, physical, biological, electrical, psychological or other laboratories. Minimum qualifications call for at least the equivalent of two years of college training, including science laboratory courses, a mechanical aptitude score of 55 on the Stenquist Test 1, and the

passing of short-answer form tests dealing with information regarding laboratory apparatus and equipment, the understanding and following of written directions, accuracy of observation, memory for oral directions, and knowledge of special laboratory procedure to fit the particular type of position available.—*K. M. Cowdery* (Stanford).

735. **Bureau of Public Personnel Administration Staff. Partially standardized tests for junior clerk.** *Pub. Person. Stud.*, 1927, **11**, 290–291.—Data from 708 California testees on tests previously described produce conclusions that the range and distribution of scores are satisfactory though not ideal, that the median score is higher than theoretically predicted, and that the results are consistent with those first reported. A correlation coefficient of .19 ± .064 between scores and amount of previous education is found; also of .19 ± .064 between scores and months of previous clerical experience. On the assumption that the scores satisfactorily measure clerical ability, the statement is made that the multiple correlation of previous education plus clerical experience with clerical ability is .243.—*K. M. Cowdery* (Stanford).

736. **Cummings, D. E. Iron men for iron ships.** *Person. J.*, 1927, **6**, 87–92.—Intelligence test scores were found to be lower for deserters and other delinquents than for recruits in the Navy. Scores of men promoted within a year ran distinctly higher than those of the non-promoted. The results may be due to the need of good schooling, as well as of intelligence, for success in the Navy.—*A. W. Kornhauser* (Chicago).

737. **Gläsel, D. Vorbildung und Alter in ihrem Einfluss auf das Ergebnis der Eignungsuntersuchung.** (The influence of training and age on the results of aptitude examinations.) *Indus. Psychotechn.*, 1927, **4**, 57–63.—Marked differences in test scores are found for three groups of applicants for positions in the railroad service. The grouping is on the basis of schooling and experience. Scores are also found to differ considerably for different age-groups. In general the older applicants do less well, but the relationship differs on the various tests.—*A. W. Kornhauser* (Chicago).

738. **Heuler, K. M. Zeitstudien beim Schuhverkauf.** (Time studies of shoe selling.) *Indus. Psychotechn.*, 1927, **4**, 1–6.—In a large Berlin store, the processes involved in selling shoes were observed, analyzed, and timed, with a view to reducing the time required on the part of salesmen. The principal conclusion is that the salesmen should have helpers to replace shoes on the shelves, to take care of repairs, etc. Interesting differences in the time taken to purchase are noted as between the sexes and social classes.—*A. W. Kornhauser* (Chicago).

739. **Hilgers, W. E., & Wohlfeil, T. Eignungsprüfung von technischen Assistentinnen an medizinischen Instituten.** (An aptitude test for technical assistants in medical institutions.) *Indus. Psychotechn.*, 1927, **4**, 10–18.—With the provision of governmental training requirements for laboratory assistants, it has become necessary to select candidates for the special course which is offered. A set of nine tests has been experimented with in the selection of 10 candidates from a list of 18 (after sifting by non-test methods). Composite test scores correlated .57 with ranking in the first semester's work of the training course. The tests included sample immediate memory, tachistoscopic observation, cancellation, a puzzle performance test, drawing, etc.—*A. W. Kornhauser* (Chicago).

740. **Kitson, H. D. Determination of vocational aptitudes: does the tapping test measure aptitude as typist or pianist?** *Person. J.*, 1927, **6**, 192–198.—Scores on a tapping test given to 25 competent pianists and to 25 typists were compared with the scores of two groups of 50 persons who were comparable to the pianists and typists but who were not selected vocationally. Only very slight differences are found between the vocationally selected groups and those unselected. From the work of other investigators it appears that the tapping test

may differentiate between ordinary typists and typists of extremely great ability, but this relationship is unimportant for vocational guidance purposes. It is suggested that vocational guidance tests should always be validated, not by correlation methods, but by the method of comparing groups of medium vocational proficiency with parallel groups not selected vocationally.—*A. W. Kornhauser* (Chicago).

741. **Moore, B. V. The May conference on leadership.** *Person. J.*, 1927, **6**, 124–128.—A brief description is given of discussions concerned with the nature and significance of leadership, the development of leaders, and methods of empirical attack on the problem.—*A. W. Kornhauser* (Chicago).

742. **Roe, A. M., & Brown, C. F. Qualifications for dentistry: a preliminary study.** *Person. J.*, 1927, **6**, 176–181.—Fifty seniors and thirty freshmen in a dental school were studied as to age, average grades, and test performance in Army Alpha and in the Downey Will-Temperament Tests. The seniors were also rated by their instructors as to probable success in dentistry. Intelligence score correlated about + .40 with grades and + .26 with estimated probable success of seniors. The Will-Temperament Tests, grouped, correlated significantly with grades of freshmen, but not with grades or estimated success of seniors. The correlation of grades with estimates was + .78.—(From *Person. J.*)

743. **Schuck, C. Der Sprechtechnische Unterricht in den Fernsprechvermittlungsämtern der Deutschen Reichspost.** (Technical speech instruction in the telephone exchanges of the German Imperial Postal System.) *Indus. Psychotechn.*, 1927, **4**, 19–25.—The importance of speech instruction for telephone operators is emphasized, and a brief indication of the methods used in Frankfurt is given. The theoretical saving to be expected from training the operators to speak quietly and without strain is contrasted with the loss in efficiency ascribed to the present noisy conditions. Graphs are presented to show the influence of various sources of noise on the efficiency of the operators.—*A. W. Kornhauser* (Chicago).

744. **von Foerster, J. F. Bericht über die Sitzung der deutschen Gesellschaft für Gewerbehygiene am 15. Nov. 1926.** (Report of the meeting of the German Industrial Hygiene Association, Nov. 15, 1926.) *Indus. Psychotechn.*, 1927, **4**, 25–29.—A brief description is given of discussions and research reports concerned with the physical demands and physiological results of manual work, the physical examination of workers, and problems of industrial training.—*A. W. Kornhauser* (Chicago).

745. **Wagner, G. Eignungsprüfungen für Akquisitions-Ingenieure.** (Aptitude tests for engineering sales specialists.) *Indus. Psychotechn.*, 1927, **4**, 33–50.—An analysis is made of the selling methods used in marketing technical instruments and apparatus, together with an inquiry into the causes of refusals to buy and the motives present in completed sales. The characteristics and abilities thought to be essential for the technical sales specialist are then detailed and a set of tests is described. Standing on the several tests correlates with ratings of ability for one group (size not specified) from .72 to .96. In another try-out the management inspected the test ratings and expressed agreement on all save a few individuals. The tests included ones calling for judgment and insight about simple apparatus presented pictorially, one for memory, one for calmness (failure to become excited about a text slandering the subjects' profession), one requiring a quick decision on a complex practical problem, and several in which the subject must treat the examiner as a prospective buyer.—*A. W. Kornhauser* (Chicago).

[See also abstracts 580, 619, 761, 792, 805.]

CHILDHOOD AND ADOLESCENCE

746. **Asher, E. J. Training needs of reform school boys experimentally determined.** *J. Delinq.*, 1927, **11**, 151–158.—Among 20 fourteen-year-old boys from the Kentucky House of Reform examined by the author all had I. Q.'s falling within the range of the lowest quartile of the population at large (md., 67; range, 49–88), while 60% scored above the median for normal fourteen-year-olds in performance on the Stenquist Assembly Test of General Mechanical Ability, Series I. 80% of the group stood higher on the mechanical test than they did on general intelligence. The author concludes that training along mechanical lines would probably more adequately fit these boys for life outside the institution than training in school subjects.—*H. L. Koch* (Texas).

747. **Bridges, K. M. B. Occupational interests of three-year-old children.** *Ped. Sem.*, 1927, **34**, 415–423.—Ten children showed in their interests the strong appeal of Montessori materials. Boys preferred occupations involving more arm, leg, and trunk muscles; girls, those involving sitting and finger manipulation. Boys appeared to exercise more freedom and invention.—*J. F. Dashiell* (North Carolina).

748. **Briggs, T. H. Praise and censure as incentives.** *School & Soc.*, 1927, **26**, 596–598.—A review is given of the experimental studies of Hurlock, Laird, and Speyer. All three investigations indicate that as incentives commendation and encouragement are superior to censure, ridicule, and threats.—*H. L. Koch* (Texas).

749. **Galloway, T. W. Parenthood and the character training of children.** New York and Cincinnati: Methodist Book Concern, 1927. Pp. 224. $1.00 ($1.10 by mail).—Intended as a basis for discussion in study club groups by those engaged in training children. Each chapter is a "lesson" and gives principles, opinions, theories, ideas for further study, quiz questions on the text, references, etc. Much advice is given to parents on how to diagnose and meet problems connected with the training of children. Bibliography.—*M. Goodrie* (Clark).

750. **Gesell, A. The measurement and prediction of mental growth.** *Psychol. Rev.*, 1927, **34**, 385–390.—The absolute measurement of abilities leads to questions concerning the measurement of growth as such and invites also a consideration of the import of age in relation to mental growth. Author lays down ten propositions concerning growth phenomena, and incidentally stresses related points of importance.—*H. Helson* (Kansas).

751. **Gesell, A., & Lord, E. E. A psychological comparison of nursery school children from homes of low and high economic status.** *Ped. Sem.*, 1927, **34**, 339–356.—Eleven children, 30 to 52 months in age, were chosen from each of two nursery schools, one attended by children from families of high economic status and the other by children of families of very low; and were paired on basis of age and time in the schools, sex and number of siblings being disregarded. Clinical observations were made of each child, largely on the basis of the Yale developmental schedules. A definite difference between the two groups was discernible in the greater spontaneity and less inhibition of speech and gesture on the part of the economically favored group; and with respect to nearly all the traits studied, this group showed to greater advantage. It is contended that these results point to the fact of great individual differences even at these ages; and the problem of when such differences first clearly assert themselves is pushed still farther toward birth and early infancy.—*J. F. Dashiell* (North Carolina).

752. **Lippman, H. S. Certain behavior responses in early infancy.** *Ped. Sem.*, 1927, **34**, 424–440.—178 infants, 4 to 18 months in age, were tested for ability to reach for an object presented. In general, the average child at 5 months

should be able to accept one object, about two months later a second object, and about three months still later a third object. Crying occurred most frequently between 6½ and 10 months, distraction of attention most between 5 and 12 months. Early ability to hold the head erect is attributed to muscular hypertonicity rather than to mental precocity. At 4½ months no hand preference was observable, but dextrality appeared in increasing degree through later months. Tables and graphs are furnished.—*J. F. Dashiell* (North Carolina).

753. **Macauley, E. Portrait studies of some exceptional children.** *Forum Educ.*, 1927, **5**, 27–36.—Brief case history presentations of eight behavior types based on complex developments. Short analyses and descriptions of partial therapy are outlined.—*K. M. Cowdery* (Stanford).

754. **McLaughlin, K. L. University nursery school as a co-operative project in research.** *J. Delinq.*, 1927, **11**, 181–183.—A report of the nursery school at the University of California at Los Angeles.—*H. L. Koch* (Texas).

755. **Thom, D. A. Everyday problems of the everyday child.** New York: Appleton, 1927. Pp. xiv + 350. $2.50.—A practical book on child management based upon information gathered from an extended experience with children and parents. Contains many suggestions as to how to meet socially undesirable habits and personality traits, and numerous examples to show how certain problems have been met. There is a 3-page bibliography.—*M. Goodrie* (Clark).

[See also abstracts 588, 665, 690, 711, 767.]

EDUCATIONAL PSYCHOLOGY

756. **Alderman, G. H. Failures among university freshmen.** *J. Educ. Res.*, 1927, **16**, 254–259.—An outline is given of the special conditions prevailing at the University of Pittsburgh, where this study was made. An outline is made of a critical study of 89 freshman failures during the first semester, 1926–1927. The results with regard to types of home, high-school record, scores on Thorndike College Entrance Examination and language difficulties are briefly outlined. The author finds that "the average American student has sufficient mental ability to succeed in his college work if he has the desire to do so." Also "that in nine cases out of ten, when boys or girls are sent to college against their wishes, their success is doubtful."—*S. W. Fernberger* (Pennsylvania).

757. **Banker, H. J. The significance of teachers' marks.** *J. Educ. Res.*, 1927, **16**, 271–284.—Continuation of a paper in a former issue in which the author pointed out that, when handled in sufficiently large numbers, the distribution of teachers' marks "conforms to a well-defined law that is clearly the expression of forces behind and independent of the enormous variability 'from teacher to teacher and from school to school.'" These curves were consistently skewed toward the higher grades. The author now analyzes the curves from several schools and finds that the medians fall off until the fifth grade and then gradually increase. This is interpreted as caused by the gradual dropping out of the poorer students after the fifth grade has been reached. These students seldom drop out before the fifth grade and until that time tend to fall farther and farther behind. —*S. W. Fernberger* (Pennsylvania).

758. **Bhattacharyya, G. A few thoughts on the organization of a school.** *Indian J. Psychol.*, 1927, **2**, 29–43.—The purpose of this paper is to emphasize the importance of individualized instruction. If the death-knell of class-teaching has not actually been rung, the emphasis is rapidly being shifted from it to some form of individual instruction. The only justification for continuing mass teaching at all is to furnish such social opportunities as the pupils may need to prepare them most effectively for the highest realization of their individual bents and abilities.

The only point for the practical teacher to note is whether the class is contributing sufficiently to the development of the child, and not whether the child is keeping pace with the class. Brief descriptions are given of such educational systems and methods as the Montessori method, the Howard plan, the Gary system, the project method, and the Dalton plan, the last mentioned in particular having been employed in many schools in Bengal and Assam. The fact that nowhere in India have these systems met with unqualified success as yet should serve rather to promote further experiment with them than to suggest their abandonment.—*L. A. Averill* (Worcester Normal).

759. **Breed, F. S. Factors contributing to success in college teaching.** *J. Educ. Res.*, 1927, **16**, 247–253.—A questionnaire listing 34 selected instructional activities was ranked by 56 members of the faculty and 100 students at the University of Chicago. The average rankings for the two groups were very similar and indicate that the most important factors have to do with (1) knowledge and organization of subject-matter; (2) skill in instruction; (3) personal qualities; (4) professional development, and (5) university cooperation.—*S. W. Fernberger* (Pennsylvania).

760. **Clay, H. A. Pestalozzi: a chapter of remembrance.** *Forum Educ.*, 1927, **5**, 23–26.—A tribute to the character and personality rather than to the achievement of Pestalozzi.—*K. M. Cowdery* (Stanford).

761. **Cox, G. J. The correlation of fine art and industry.** *Teach. Coll. Rec.*, 1927, **29**, 101–108.—"The only remedy for the fine arts would seem to be a healthy contact with the industrial arts."—*H. H. Remmers* (Purdue).

762. **Darsie, M. L. What constitutes high scholarship?** *School & Soc.*, 1927, **26**, 565–566.—A system for evaluating the relative scholastic standing of students is presented. It involves (1) the use of the grade curve by all instructors, (2) a system of penalties and rewards in the form of grade points for grades above and below the average C, and (3) the assigning of percentile ranks to the various grade-point averages.—*H. L. Koch* (Texas).

763. **Estabrooks, G. H. A new type of objective examination.** *Ped. Sem.*, 1927, **34**, 368–372.—Recommendations are made on the basis of experience with short question and short essay types of examination.—*J. F. Dashiell* (North Carolina).

764. **Estabrooks, G. H. A system of note-taking.** *School & Soc.*, 1927, **26**, 715–717.—*H. L. Koch* (Texas).

765. **Fouracre, L. Psychological tests of mathematical ability.** *Forum Educ.*, 1926, **3**, 201–205.—Tests of arithmetic, algebra, geometry and general intelligence were given to 91 standard VII and secondary school boys. First order and partial correlation coefficients indicate specific arithmetic and geometric abilities, only loosely connected with each other. Arithmetic ability is more closely related to algebraic than is either to geometric. The closeness of the correlation of the three abilities to general intelligence is in the order arithmetic, algebraic, and geometric.—*K. M. Cowdery* (Stanford).

766. **Gates, A. I. The improvement of reading: a program of diagnostic and remedial methods.** New York: Macmillan, 1927. Pp. xii + 440.—In this book, the author presents tests for measuring achievement and diagnosing particular difficulties in reading. He investigates each type of difficulty to find its probable cause, and outlines appropriate remedial methods of instruction for each type, as well as methods to be pursued in the general teaching of reading. These are the tests used, directions for which are included in an appendix: *Primary*—word recognition, phrase and sentence reading, reading paragraphs of directions. *Upper grade*—reading to appreciate the general significance of a paragraph, reading to predict the outcome of certain events, reading to understand precise directions, reading to note details. *For diagnosis in cases of extreme reading*

disability—general intelligence, visual, auditory, and motor functions, associative learning, nervous and emotional stability. Several case studies, as well as a group study of backward readers, are reported. Bibliographies are inserted after each chapter.—*R. G. Sherwood* (Stillwater, Minn.).

767. **Hoffmann, J. Experimentell-psychologische Untersuchungen über Leseleistungen von Schulkindern.** (Experimental researches on the reading abilities of school-children.) *Arch. f. d. ges. Psychol.*, 1927, **58**, 325–388.—Two hundred and fifty public-school pupils of all ages and both sexes were examined as to their reading ability by the tachistoscopic method with an exposure-time of 0.1 sec. Series of consonants, syllable-groups, unfamiliar and familiar words constituted the material. Results: (1) The average achievement (number of letters read and correctly reported per exposure) increases with age, rapidly at first, then more slowly. In the highest school-grade (age 14) the adult level is not yet reached. (2) The reading achievement is least with consonant-series and increases stepwise in passing to syllables, unfamiliar and familiar words respectively. (3) For the average of all classes the reading achievement is about the same for both sexes. (4) There is a close connection between reading achievement and general mental endowment (the latter being estimated from the teacher's judgment). The correlation is lowest for the reading of nonsense material and highest for that of familiar words. (5) The average achievements of a class on the four different types of material stand in characteristic ratios to one another, which ratios are constant from the ninth year onward. (6) The average reaction-time (interval between exposure and report) is longer for boys than for girls. For either sex it is longer for pupils of lower general endowment. Bibliography of 61 titles.—*D. McL. Purdy* (California).

768. **Isaacs, S. The function of the school for the young child.** *Forum Educ.*, 1927, **2**, 116–133.—(See Abstract 507.)—*K. M. Cowdery* (Stanford).

769. **Jones, E. S. Testing and training the inferior or doubtful freshman.** *Person. J.*, 1927, **6**, 182–191.—A group of 32 prospective freshmen, coming from the lowest two-fifths of their high school classes, was given intensive special training for three and one-half weeks before the opening of the college year. During the first semester these "poor risk" students succeeded as well as those from the middle fifth of high school classes, and they improved further in the second semester. Correlations of thirteen different intelligence tests with first-semester grades range from .12 to .55 for the group of 32 students. Ability to make good scores on tests was found to increase considerably as a result of 20 hours of testing and three weeks of drill. The principal forms of training were writing compositions, drill in rapid reading, drill in note-taking, drill in mathematics, and lectures on mental hygiene, habits, culture, etc.—*A. W. Kornhauser* (Chicago).

770. **Judd, C. H., & others. Report of the Commission on Length of Elementary Education.** *Sup. Educ. Monog.*, 1927, No. 34. Pp. 167.—With a view to determining the optimum length of elementary education, a study was made of 610 elementary school systems in different parts of the United States. Of these 241 were organized on the 8–4 plan (i.e., 8 elementary grades and 4 years high school); 57 on the 7–4 plan, in which pupils are admitted to high school directly upon completion of the seventh grade; 231 had some type of junior high school system, and 81 employed other systems. It is shown that many factors in addition to the length of the elementary school period condition the age and attainments of pupils entering high school. Among these are the length of the school day, which in different systems was found to vary from a minimum of less than 300 minutes to a maximum of more than 360 minutes; the average number of days per annum on which school was in session, which varied from 111 to 195; differences in compulsory education requirements and in mean age at time of school entrance; differences in promotion policies, in training of teachers, varia-

tions in curricula, etc. Each of these factors has been considered, and the findings presented in detailed tabular form. It is shown that some further improvement as indicated by scores on achievement tests, is made by pupils who attend the eighth grade, so that these pupils enter the high school with a slightly better average standing than those coming from a seven-grade system. The pupils from the seven-grade schools were, however, satisfactorily prepared for high school courses. The slight difference in scholastic standing between the two groups had entirely disappeared by the time of college entrance, though a small age difference persisted, the students coming from the seven-grade systems averaging slightly younger than those from the eight-grade systems. The Commission points out that, owing to the prolonged period of elementary education in the United States, our pupils, on the average, are about two years behind European pupils in securing the education which is necessary for admission to the professions and to the higher levels of commercial and industrial training.—*F. L. Goodenough* (Minnesota).

771. **MacTaggart, M. M. Non-scholastic tests for backward pupils.** *Forum Educ.*, 1927, **2**, 102–112.—In cases of backwardness in school work not accounted for by low general intelligence, evidence of compensation for this condition by means of non-scholastic ability and out-of-school interests was sought by the use of (1) a technical information test, (2) a practical test in the form of statements of why one of two presented house-plans is better than the other, and (3) the Stenquist Mechanical Aptitude Test. For technical information the correlations with mental age and with educational age were .37 and .19 respectively. In the case of the plan test the coefficients were .54 and .24. The relatively low correlations are interpreted as giving clues to abilities not revealed by intelligence or scholastic tests. 27% of backward pupils would be better adjusted if the curriculum offered them other than the present strictly academic subjects.—*K. M. Cowdery* (Stanford).

772. **Main, J. H. T. Suggestions on education for women.** *School & Soc.*, 1927, **26**, 663–666.—*H. L. Koch* (Texas).

773. **Miner, J. B. Scholarship and intelligence: relationships for the same groups throughout the college course.** *Person. J.*, 1927, **6**, 113–118.—In the University of Kentucky a distinctly smaller percentage of freshmen having low intelligence test scores remained in succeeding years than was true for those with medium and high scores. Correlation studies in both the Arts College and the Engineering College showed that first semester scholarship was more closely related to later scholastic record than were intelligence test scores. In the Arts College, test correlations with scholarship were lower for the later years than for the first year, but in the Engineering College the relationship was highest for the last year.—*A. W. Kornhauser* (Chicago).

774. **Osburn, W. J. How shall we subtract?** *J. Educ. Res.*, 1927, **16**, 237–246.—Reports an experimental investigation of three methods of subtraction: the additive, the take-away and the complementary. "According to these data, a school which changes from the take-away decomposition to the take-away equal-additions takes far less chances than all of us take in almost everything that we do. The superiority of equal-additions (carrying) over decomposition (borrowing) is 'as certain as taxes' and 'almost as certain as death.' The superiority of the take-away equal-additions method over the additive . . . is much greater than one to sixteen."—*S. W. Fernberger* (Pennsylvania).

775. **Peter, W. W. The psychology of public health education.** *Amer. J. Pub. Health*, 1927, **17**, 485–489.—It pays to advertise.—*R. R. Willoughby* (Clark).

776. **Poray, A. The high-school library and the development of character.** *School & Soc.*, 1927, **26**, 666–672.—*H. L. Koch* (Texas).

777. **Radford, P. Fine art and literature in health education.** *Teach. Coll. Rec.*, 1927, **29**, 138–147.—(Introduction by Thos. D. Wood.) "Health education is the sum of the experiences in school and elsewhere which favorably influence habits, attitudes, and knowledge relating to individual, community, and racial health. . . . In this article the writer presents some tentative ideas and opinions regarding the help which may be given by art and literature in the programs of health education." Educational methods appropriate to the problem are discussed.—*H. H. Remmers* (Purdue).

778. **Richard, A. L'éducation intellectuelle et physique de l'enfant et sa santé.** (Intellectual and physical education of the child and his health.) *Bull. Instit. gén. psychol.*, **27**, No. 1–3, 21–38.—The author considers that there is a question in education which comprises along parallel lines the psychological side and the physical side. Intellectual education is commonly viewed in two ways: (1) The question is asked, What is the amount of knowledge that the mind of a child is able to acquire at each stage of his development? (2) It is possible to determine what is the amount of knowledge that a man must possess and what is absolutely necessary for him to acquire. These two points of view are found again in physical education. Furthermore, is there a fatigue peculiar to cerebral exercise? Neural fatigue is not accompanied by losses which are easily perceptible chemically as are those of physical fatigue, and this neural fatigue is less easily revealed. The author endeavors to define neural fatigue. The state of fatigue is a physiological condition which normally follows a period of work and which goes on into repose. The fatigue ought to disappear completely during this period of rest; otherwise, there remains a quantity of fatigue as a remnant which by increasing each day brings on a state of overwork which is no longer physiological but pathological. Education ought to tend towards a realization of a mixed type with a suitable proportion between intellectual work and sports, by taking care to arrange for relaxation.—*Math. H. Piéron* (Sorbonne).

779. **Sandon, F. A statistical study of some school marks.** *Forum Educ.*, 1926, **3**, 223–229.—Comparisons of percentage grades of children known to be of equal ability in different class sections reveal unjustified average differences apparently due to "halo" effects, lack of objective bases for marking, carelessness and fatigue on the part of markers. The result is a lack of comparability of similar levels of grades. Different levels for the two sexes were also noted. Three methods of discovering and evaluating differences are suggested.—*K. M. Cowdery* (Stanford).

780. **Smith, H. B. Some thoughts on the training of character.** *Forum Educ.*, 1927, **5**, 17–26.—Character is defined, not in moral or religious terms, as the ability to achieve in terms of one's interests. Training may take the form of practice in obeying promptly the call of an interest before conflicting impulses appear. Creative thought and consequent development of interests may be encouraged by the setting of problems to students followed by the providing of protection from distractions, opportunity and encouragement to reach independent solutions. Thereby both an informational background and self-confidence are produced.—*K. M. Cowdery* (Stanford).

781. **Stalnaker, E. M., & Roller, R. D., Jr. A study of one hundred non-promoted children.** *J. Educ. Res.*, 1927, **16**, 265–270.—The purpose of the investigation was to determine to what extent low mentality was responsible for non-promotion in an elementary school. Besides physical examinations and the like, the pupils were given the Binet-Simon and the Porteus Tests for Mental Deficiency. The results show that "the failure of probably 91% and certainly 31% was due to mental deficiency. The Stanford Revision of the Binet-Simon test measured more nearly the abilities demanded for success in school subjects than did the Porteus test. Physical defects were not much more prevalent among the

retarded group than among the normally progressing group."—*S. W. Fernberger* (Pennsylvania).

782. **Stanforth, A. T. Study in social attitudes of a group of high-school boys and girls.** *School & Soc.*, 1927, **26**, 723–726.—A questionnaire submitted to the students of Point Mount Pleasant High School, which draws half of its enrollment from rural districts, shows that (1) the students believe themselves in need of social training; (2) the provisions for extra-curricular activities are not considered adequate; (3) fraternities, which do not exist in the group, are nevertheless strongly favored because of the social training they are alleged to afford; (4) dramatics, picnics, and dances are the most popular forms of amusement; (5) the last hour of the day or Friday evening are the favored times for extra-curricular activities; and (6) faculty counselling in most social activities is accepted as desirable.—*H. L. Koch* (Texas).

783. **Stone, C. W., & Curtis, J. W. Progress of equivalent one-room and graded-school pupils.** *J. Educ. Res.*, 1927, **16**, 260–264.—Report of survey made in Spokane County, Washington, of the intelligence and attainment of pupils in one-room rural schools and in village graded schools, with 420 pupils in the 7th-9th grades. Eight intelligence and achievement tests were used. The results show that 9th grade pupils who come through graded schools were better prepared than pupils who had come through one-room schools. The same is true for pupils in the 7th and 8th grades. Also, the students from graded schools make better grades in school work and in the state examination.—*S. W. Fernberger* (Pennsylvania).

784. **Stryker, S. B. Undergrading as a cause of delinquency.** *School & Soc.*, 1927, **26**, 821–822.—A case report.—*H. L. Koch* (Texas).

785. **Swisher, W. S. Psychology for the music teacher.** Boston: Ditson, 1926. Pp. 78. $0.60.—Aims to tell the music teacher what psychology is and how a knowledge of it can be applied to teaching. A sentence chosen at random will give an idea as to the general tone: "The teacher must be careful not to bring the atmosphere of his own personal difficulties into the studio."—*M. Goodrie* (Clark).

786. **Symonds, P. M. Measurement in secondary education.** New York: Macmillan, 1927. Pp. xvii + 588. $2.50.—This volume opens with three introductory chapters devoted to the need of better measurements to replace the traditional school examination. After surveying the evidence for the new type of objective examination, Chapters IV to XI describe in detail the principal tests for intelligence, social studies, English, mathematics, science, language, physical education, and other subjects. Chapters XII to XXV treat the interpretation of test scores, norms, criteria for the choice of tests, derived scores, prognosis tests, prediction of high school and college success, and the general uses of tests for prediction, guidance, promotion, ability-grouping, etc. An appendix lists and describes certain statistical procedures allied to the selection and interpretation of tests and includes a list of test publishers. The existing tests and measurements applicable in the high school are described and evaluated in great detail, especial attention being paid to the literature on the usefulness of each measure considered. Extensive and carefully selected bibliographies are placed at the end of each chapter. The evaluations of tests are based upon critical experimentation.—*G. M. Ruch* (California).

787. **Tharp, J. B. The new examination *versus* the old in foreign languages.** *School & Soc.*, 1927, **26**, 691–694.—*H. L. Koch* (Texas).

788. **Thorndike, E. L. Education for initiative and originality.** *Teach. Coll. Rec.*, 1927, **29**, 89–100.—A reprint of an address given before the staff of Teachers College in 1916.—*H. H. Remmers* (Purdue).

789. **Tinker, M. A. Legibility and eye movement in reading.** *Psychol.*

Bull., 1927, **24**, 621–639.—A review of literature of 81 titles. Much experimental work has been done on the relative legibility of different type faces and on such factors as size of type, upper *versus* lower case, isolated contour letters (as L and J) *versus* grating letters (as B and R), indenting at margin, and open spacing *versus* lines. Many forms of technique have been in use: the focal variator, cancellation, eye movements, reaction time for reading letters, speed of reading text, peripheral vision, distance, short exposure, illumination, etc. It would appear that a final definite ranking of faces and evaluation of factors awaits closer agreement between investigators. Much work has been done also on eye movements in reading. Individual differences have been noted as associated with school grade, with maturity, with good and poor reading ability, with oral and silent reading. Differences of exposure material have been introduced: fiction, geography, algebra, French and Latin, numerals, musical notation, Chinese characters arranged horizontally and vertically, etc. In these studies the oculomotor characteristics most commonly analyzed and measured for determining efficiency in the mechanics of reading are the number of pauses, the duration of pauses, and regressions.—*J. F. Dashiell* (North Carolina).

790. **Trow, W. C. The leisure activities of students and their instructors.** *Ped. Sem.*, 1927, **34**, 406–414.—Different groups of advanced students and teachers responded to a questionnaire concerning their participation in leisure time activities. The number of different activities was nearly the same for each group; with the maturer groups a lessened interest appeared in motion pictures, athletic contests, social meetings and games; yet large numbers of the teaching class showed but little interest in music, art, literature, etc.; little differentiation of interests appeared between the humanistic and the scientific groups.—*J. F. Dashiell* (North Carolina).

791. **Twigg, A. M. French vocabulary.** (Harvard tests.) Boston: Ginn, 1927. $0.48 per pad of 30.—Each test blank is a 5-page leaflet, with (except for the first page) short sentences in French of which the pupil writes the translation of the underlined word. The selection is an approximately random sampling of 150 words from a count of 100,000 words from general sources. The credit score of each word is proportional to its frequency, and 70 free credits are given, bringing the possible score to 1000 (which becomes a percentage score on being divided by 10). Only one form appears to be available as yet, and no information is given as to reliability. Medians (standards) are given, based on 1800 cases; they range from 70 (percentage score) for one-half year's study of the language to 92 for four years.—*R. R. Willoughby* (Clark).

792. **Valentine, C. W., & Ritchie, F. M. An enquiry as to reasons for the choice of occupations among secondary school pupils.** *Forum Educ.*, 1927, **2**, 85–101.—Pupils in two secondary schools wrote anonymous statements indicating their occupational choice, with age at time of choice and reason for making it. Later they indicated by marking a list the relative order of importance of several influences. The spontaneous responses were grouped as based on mistaken ideas implying lack of knowledge, superficial and trivial reasons or side issues, "respectability" motive or antagonism to manual work, influence of a favorite school subject, and enthusiasms and ambitions of adolescence. Conclusions are drawn that over half are choosing their occupation on wrong or inadequate grounds, that the nature of the replies depends largely on reasons given by parents and that a well-informed advisor could materially improve the situation. From the second part of the study age differences are noted, namely, a sudden increase at 16 of cases in which prospects of advancement are indicated, and, above 14, a decline in frequency of father's wish or occupation.—*K. M. Cowdery* (Stanford).

793. **Wallin, J. E. W., & Gilbert, M. A brief educational attainment scale**

for clinical use. *Ped. Sem.*, 1927, **34**, 441–489.—An individual composite achievement scale for testing ability in use of written language, reading, spelling, and arithmetic, for the first three school grades, without undue expenditure of time, has been standardized on a total of 1066 children. 35 tables of data upon which the norms are based are given. The scale, directions for administering it, and the record sheet are reproduced.—*J. F. Dashiell* (North Carolina).

794. **Whipple, H. D. Making citizens of the mentally limited.** Bloomington, Ill.: Public School Publ. Co., 1927. Pp. 374.—A volume on methods and curriculum, with an introduction and discussion of general pedagogical principles, chapter bibliographies, and lists of supplementary material.—*R. R. Willoughby* (Clark).

795. **Wilkins, E. H. College teaching.** *School & Soc.*, 1927, **26**, 567–571.—*H. L. Koch* (Texas).

796. **Winch, W. H. Print-script and cursive script in schools: an investigation in nervo-muscular re-adjustments.** *Forum Educ.*, 1926, **3**, 206–222.—Instead of attempts to prove whether print-script is more or less facile than cursive script these are studies of what happens to efficiency in writing when one style of writing is changed for another with intensive practice on the new. Results suggest that unless the change is made early in the school course the new style does not attain to the final efficiency of the old style even after three years of disuse of the old. The one exception found was a group of abler girls in standards VII and VIa who, in two years, attained greater efficiency in the new than they had in the former style.—*K. M. Cowdery* (Stanford).

797. **Winch, W. H. The necessity of experimental pedagogy.** *Forum Educ.*, 1927, **5**, 3–9.—Following a characterization of teachers' conferences as superficial, educational exhibitions as deceptive, and inspectorial reports as too often unfair, a plea is made for more use of the statistical and inductive methods of biology to determine principles of educational procedure. The use of correlation technique on suitably selected data and with conservative interpretations is urged.—*K. M. Cowdery* (Stanford).

798. **Winslow, C. E. A. Relation between respiratory illness and air conditions in certain Syracuse schools.** *School & Soc.*, 1927, **26**, 785–788.—The commission succeeding the New York Commission on Ventilation has in a comparative study of 3 plenum-ventilated schools with 3 old-fashioned furnace-heated schools furnished with gravity exhaust confirmed an earlier finding; namely, that the former ventilation system is associated with a considerably greater incidence of minor respiratory disease in school children than is the latter. The higher temperature maintained by the plenum systems seems to be a factor in their unfavorable results.—*H. L. Koch* (Texas).

799. **Zirbes, L. Health education materials from the psychological viewpoint.** *Teach. Coll. Rec.*, 1927, **29**, 122–137.—The author points out the widely recognized significance of health education and some of the factors responsible for the prevailing attitudes, and discusses the psychological aspects of "the threefold objective of health education, viz.: health habits, health knowledge, health attitudes." The unpsychological nature of some health education texts in pointed out, as well as the soundness of others in this regard.—*H. H. Remmers* (Purdue).

[See also abstracts 589, 690, 731, 751, 754, 787, 793, 804, 809, 810, 812, 816.]

BIOMETRY AND STATISTICS

800. **McCloy, C. H. A method of computing partial correlation and regression equations with variables having curvilinear intercorrelations.** *J. Educ. Res.*, 1927, **16**, 285–295.—This paper presents a method for making a scatter

diagram of a partial correlation of three or more variables from the original data, from which various statistical devices may be computed and from which relationships may be shown graphically. By using two or more of these computations, multiple regressions may be obtained. If the correlation is curvilinear, a curve may be fitted to the means of the arrays from which may be obtained a "curvilinear regression." Records of at least 400 individuals are desirable for accuracy of result. This number needs to be greatly increased where more than three variables are introduced.—*S. W. Fernberger* (Pennsylvania).

801. **Sheldon, W. H. Ability and facial measurements.** *Person. J.*, 1927, **6**, 102–112.—Head and face measurements of 100 college students were made from photographs taken under carefully controlled arrangements, and were correlated with ratings on five social traits and with intelligence test scores and scholastic grades. Low positive correlations were found between the head and face measurements (the size of the head and face) and ratings on sociability, perseverance, leadership, and aggressiveness. The correlations with ratings of emotionality were about zero. Intelligence test scores and grades showed a low positive correlation with head length, breadth, and height; a low negative correlation with facial length and breadth; and no correlation with ratios between various head and face measurements.—*A. W. Kornhauser* (Chicago).

802. **Thurstone, L. L. A mental unit of measurement.** *Psychol. Rev.*, 1927, **34**, 415–423.—The proposed mental unit for mental measurement may be defined as the standard deviation of the frequency distribution projected by a standard stimulus on the psychological continuum. This mental unit of measurement is called the standard discriminal error. The assumption is made that an S-scale with internal consistency will be obtained by spacing the perceptual qualities on it so that their probabilities of association with any given stimulus will be Gaussian. With the psychological continuum so defined, the standard discriminal error will be the standard deviation of the perceptual qualities perceived in a standard stimulus. According to this view, Fechner's paradox does not exist; it is inaccurate to allow the description of the S–R relation to remain as though it consisted in a series of jerks with a constant friction load for every jerk; the S-value of a stimulus is the mean perceptual value of many repeated perceptions of the same stimulus.—*H. Helson* (Kansas).

803. **Thurstone, L. L. Three psychophysical laws.** *Psychol. Rev.*, 1927, **34**, 424–432.—Weber's law, Fechner's law and the author's law of comparative judgment are critically discussed with a view to showing what each really does and does not do. The author shows that: Fechner's and Thurstone's laws involve measurement along a truly psychological continuum while Weber's law does not; Weber's and Fechner's laws involve the stimulus magnitudes, while the author's law of comparative judgment does not; Weber's and Thurstone's laws take account of the proportion of judgments such as "R_1 greater than R_2," but Fechner's law does not (Fechner's law thus does not deal with errors of observation, whereas the other two deal primarily with the magnitudes of errors of judgment); the stimulus increase which yields a prescribed proportion of similar discriminatory judgments is involved in Weber's law, but not in either of the other two; and, finally, the discriminal dispersion, of which the law of comparative judgment takes account, is not explicit in either Weber's or Fechner's laws. Cattell's formulation of Weber's law is also discussed.—*H. Helson* (Kansas).

804. **Thurstone, L. L. The unit of measurement in educational scales.** *J. Educ. Psychol.*, 1927, **18**, 505–524.—In the construction of scales under the general direction of Thorndike one assumption appears which can be proved to be invalid. This is that when the distributions of abilities of several grades are plotted on a common base line or scale, their spreads or S.D.'s will be equal. By appealing directly to the data which Trabue used in the construction of his lan-

guage scales, the writer is able to show that the standard deviations increase in size from the second to the twelfth grades, the latter being twice as large as the former. By means of a formula derived by him Thurstone corrects for the differences in variations and thus projects the elements of the test upon a true scale. He is thus enabled to explain the wide gaps occurring between elements of the scale which appeared in the upper grades and show consistency in the results where before there was inconsistency. He calls his method "absolute" because it "is independent of the unit selected for the raw scores and of the shape of the distribution of the raw scores."—*A. M. Jordan* (North Carolina).

805. **Weiss, E. Anzahl von Versuchspersonen und Beständigkeit der Mittelwerte.** (Number of experimental subjects and reliability of the average.) *Indus. Psychotechn.*, 1927, **4**, 50–57.—Measures of central tendency and of dispersion of test scores are compared for groups of untrained railroad workers. Data from two tests were used—comparison of weights and a test of attention. The subjects are grouped into five age-ranges (20–25, 20–30, 20–40, etc.), and for each range six to eight groups of different size (25 persons up to 250) are compared to ascertain the constancy of the averages and measures of variation. (The empirical variations are not compared with the theoretical reliabilities of the values.)—*A. W. Kornhauser* (Chicago).

MENTAL TESTS

806. **Blackwood, B. A study of mental testing in relation to anthropology.** *Ment. Meas. Monog.*, 1927, No. 4. Pp. v + 120.—Part I is given to a discussion of the problems involved in the testing of immigrants, of racial groups under civilized conditions, and of primitive peoples. Special difficulties resulting from unequal selection of subjects, language handicaps, and differences in cultural background are discussed, and problems of motivation are considered. A number of available methods are described and classified, and results obtained by these methods as reported in the literature are briefly discussed. In Part II the author reports the results of a study in which the International Group Mental Test, developed by Squires under the auspices of the National Research Council, was given to 413 Indian children of several different tribes, and to 200 Spanish-American ("Mexican") children. All except 18 of the Indian children were believed to be full-bloods. 27 of the Spanish-American children had one parent other than Spanish-speaking. No reliable differences were found between the two racial groups by means of this test. The Otis Self-Administering Test was also given to 149 of the Indians and to 93 of the Spanish-Americans. On this test, while both groups were far below the norms for white children, the apparent retardation of the Indians was much greater than that of the Spanish-Americans. The author attributes this difference not only to greater language handicap on the part of the Indians, but also to their lack of the knowledge of civilized conditions which the nature of the test presupposes. A bibliography of 76 titles is included.—*F. L. Goodenough* (Minnesota).

807. **de Weerdt, E. H. A study of the improvability of fifth grade school children in certain mental functions.** *J. Educ. Psychol.*, 1927, **18**, 547–557.—Forty-nine children of Grade V were practiced for eleven days in several tests: substitution, addition, reading, cancellation, multiplication, same-opposite and multiplication by substitution. The total practice time for the tests varies from 13 minutes for the same-opposite test to 55 minutes for the addition and multiplication. The percentage of improvement ranged from 323 with reading to 37 with addition. Initial scores correlated from —.22 to .78 with improvement, the .78 being reading. The correlations between initial scores and final scores were

much higher, with a variation between .68 and .93, the latter being reading. The ten scores initially highest were compared with the ten initially lowest, showing in general a much higher percentage of improvement for the initially highest. But there were large differences among the tests. There is a small correlation between improvement and scores on an intelligence test, scattering all the way from —.07 for cancellation to .56 for reading. One conclusion is that general intelligence tests do not foretell the improvement in specific functions and that we can discover the rate of improvement in specific traits by short periods of practice.—*A. M. Jordan* (North Carolina).

808. **English, H. B. The predictive value of intelligence tests.** *School & Soc.*, 1927, **26**, 783.—A discussion is given of the predictive significance of correlation coefficients of various sizes.—*H. L. Koch* (Texas).

809. **Fritz, M. F. Guessing in a true-false test.** *J. Educ. Psychol.*, 1927, **18**, 558–561.—Fifty statements were taken from the Encyclopedia Medica and arranged so that there were an equal number of true statements and of false statements. 62% were marked true and 38% false. Informing the student of this tendency will probably not eliminate the difficulty.—*A. M. Jordan* (North Carolina).

810. **Gates, A. I. Methods of constructing and validating the Gates reading tests.** *Teach. Coll. Rec.*, 1927, **29**, 148–159.—The underlying theory, methods of selection and construction, self-correlations and intercorrelations of a team of six tests designed to measure various aspects of reading ability in Grades 3 to 8 are given. This is followed by reasons for the final selection of a team of four tests: (1) reading to appreciate the general significance of a paragraph; (2) reading to predict the outcome of future events; (3) reading to understand precise directions; and (4) reading to note details. The construction of age and grade norms, the determination of equivalence of units within a test, of equivalence of forms, of practice effects, and of the reliability of the tests are discussed. —*H. H. Remmers* (Purdue).

811. **Goodenough, F. L. The consistency of sex differences in mental traits at various ages.** *Psychol. Rev.*, 1927, **34**, 440–462.—A review of the findings with respect to differences in the sexes. Problems investigated and reviewed are discussed under the following rubrics: use or comprehension of speech; number concepts, arithmetical reasoning, and computation; reproduction and memory; amount and range of general information; mechanical ability and motor skill. One of the conclusions is that mental differences between the sexes are very small in comparison with the amount of variation found to exist between members of the same sex, and these may be ignored so far as educational procedure is concerned. However, sex differences, according to most investigators, do exist in measurable degree. How these differences have originated is not apparent from the data at hand. A bibliography is appended.—*H. Helson* (Kansas).

812. **Kepner, T. Background in social studies.** (Harvard tests.) Boston: Ginn, 1927. $0.60 per pad of 30.—Each test blank is a 5-page leaflet consisting of 7 sections, with 100 elements in all; score is number of correct elements. The material covers history, geography and civics of the pre-high-school level. No norms are available, and no information on reliability or validity. The elements of the two forms have been equated as to difficulty in terms of the percentages correctly answered. The administration time is from twenty to forty minutes. The author maintains that results from about 800 high school pupils indicate that the customary assumptions as to the background brought to the social studies are not warranted.—*R. R. Willoughby* (Clark).

813. **Pyle, W. H. The I.Q. and the individual.** *School & Soc.*, 1927, **26**, 788–790.—It is the author's thesis that, since the performance level of an individual tends to vary markedly from function to function or task to task, the

hotch-pot type of structure which we find in the usual intelligence test will give results of little value in predicting performance in specific activities.—*H. L. Koch* (Texas).

814. **Rockwell, J. G. Genius and the I.Q.** *Psychol. Rev.*, 1927, **34**, 377–384.—Although the I.Q. concept may be limited as the Stanford group has done, calling a high I.Q. genius, nevertheless a high I.Q. does not necessarily mean high creative productivity. The highest achievements require a further quality which the intelligence tests seem to miss. Adult creativeness is the result of intellectual mobilization, which, if not emotionally driven, is at least facilitated by feeling.—*H. Helson* (Kansas).

815. **Slocombe, C. S. The influence of practice in mental tests.** *Forum Educ.*, 1926, **3**, 173–179.—Varied cyclic orders were used in giving eight types of intelligence tests to eight groups of children. The reliability of the material was found to be greater if placed later in a test series, suggesting that in testing care should be taken to give adequate fore-practice. Four types of test material were repeated eight times at one-week intervals. Almost maximum efficiency was reached at the second testing but no decrease noted thereafter. To offset disturbing factors give at least two tests and disregard the first.—*K. M. Cowdery* (Stanford).

816. **Stoy, E. G. Tests for mechanical drawing aptitude.** *Person. J.*, 1927, **6**, 93–101.—A series of tests was given in two high schools to groups of students differentiated on the basis of promise or lack of promise in mechanical drawing. The criterion of promise was the judgment of the teachers supplemented by a practical mechanical drawing test. Use was made of thirteen separate aptitude tests, concerned with spatial relations, motility, and mechanical ingenuity. Six of these revealed significant group differences between promising and unpromising students, viz.: Thurstone-Jones Problem 4 (Paper Folding), Minnesota Paper Form Board, Downey Group Test V (Coördination of Impulses), Downey Group Test VIII (Flexibility), Painted Cube Test, and Freeman Puzzle Box.—(From *Person. J.*)

817. **Witty, P. A., & Lehman, H. C. Drive: a neglected trait in the study of the gifted.** *Psychol. Rev.*, 1927, **34**, 364–376.—The optimism with which Rugg, Terman, and Hollingworth look upon the future of gifted children is not shared by the present writers. They feel that the importance of capacity is overemphasized and the significance of drive neglected or under-estimated. Two questions now arise: is drive innate or a product of environmental factors, and is it proportionate to capacity as indicated by the Binet tests? The writers believe and support their belief with evidence that drive is a product of numerous variables and ability in itself does not insure intense effort or drive. Post-mortem I.Q.'s fail to prove that drive is not as necessary as what the intelligence tests get at. Finally, drive is only one of many elements conditioning outstanding achievement.—*H. Helson* (Kansas).

818. **Witty, P. A., & Lehman, H. C. The so-called "general character test."** *Psychol. Rev.*, 1927, **34**, 401–414.—A critique of the general character tests, their assumptions, unjustified conclusions, and insufficiency. Several positive theses are supported by the authors on the basis of their own observations: (1) character is neither a unitary trait nor a combination of unitary traits, but is rather a result of acquired habits; (2) morality is acquired, and in terms of specific habit-formations. The authors' final conclusion is that the attempts at character measurement appear spurious and unnecessary if we seek out diligently those specific habits which we call good in life and make provision for their acquisition. —*H. Helson* (Kansas).

819. **Zyve, D. L. A test of scientific aptitude.** *J. Educ. Psychol.*, 1927, **18**, 525–546.—After making a careful analysis of the characteristics required for the

prosecution of successful work in science, tests are constructed which try out the most important of these aptitudes. Some of these tests are concerned with clarity of definition, suspended *vs.* snap judgment, experimental bent, discrimination of values in selecting and arranging experimental data, detection of fallacies and contradictions, reasoning, etc. The tests were tried out upon scientific and non-scientific students as well as upon members of the faculty. Clear-cut differences are found between the scientific and the non-scientific. Estimates of the scientific possibilities of students were made by their instructors and correlations made between the tests and these estimates. The tests predicted well ($r = .74$). Moreover, these tests of scientific aptitude correlated low ($r = .13$) with the Terman Group Test. Correlations were also computed with school marks of both the scientific students and the non-scientific. In brief,'the validity of the test is represented by an r of .82 and its reliability by an r of .93.—*A. M. Jordan* (North Carolina).

[See also abstracts 709, 732, 736, 737, 739, 740, 745, 750, 751, 767, 771, 773, 781, 786, 804.]